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ABSTRACT

This publication reports the major discussions at a conference that was held to improve the policy education efforts of extension workers responsible for public affairs programs. It begins with abstracts of the 22 presentations. Four papers deal with public policy education in the 1990s: "To Inform Their Discretion: Policy Education and Democratic Politics" (Briand); "Issues, Alternatives, and Consequences" (House); "The Case for Advocacy in Extension Public Policy Education" (Hite); "Limits of Public Policy Education" (Barron); and "An Extension Lay Leader's Reaction to the Morning Program" (Grezaffi). Ten papers are found in the section on agriculture and environmental policymaking--issues, actors, strategies: "Agriculture and the Environment in the 1990s: Changing Setting and Characteristics" (Zinn); "Right Versus Right--Finding Common Ground" (Campbell); "Agriculture and Environmental Policymaking: Issues, Actors, and Strategies--State Government Perspective" (Armstrong-Cummings); "Innovation in Environmental Policy Education through Coalitions: The Groundwater Policy Education Project" (Abdalla); "Initiating a Coalition for Groundwater Policy Education: Observations and Lessons from a Rural Iowa County" (Padgitt); "Groundwater Policy Education Project: North Carolina" (Danielson); "Emerging Rural Farm-Nonfarm Conflicts: Whose Preferences Count?" (Lohr, Harvey); "Wetlands and Endangered Species: Educational Assistance Needs of Extension Educators" (House, Greenway); "Resource Issues and Options--RIO: A Coordinated Approach to Education on Natural Resource Issues" (Cleaves, Reed); and "Public Policy Education for Wetlands Issues" (Johnson). In the section on the rural social infrastructure are these four presentations: "Reinvesting in the Social Infrastructure of Communities" (Harvey); "The State of the Rural Health Care System" (McDowell); "Alternatives and Consequences of Health Care Prototypes and Developing a Public Policy Education Program" (Fretwell, Feeney); and "Rural Elementary and Secondary Education: Funding and Allocation Issues" (Jones, McNamara). The section on domestic consequences of evolving international trade contains these three papers: "How NAFTA (North American Free Trade Agreement) Will Affect Agriculture in the United States: Regional Impacts" (Sumner); "International Trade Policy: Challenges and Opportunities for U.S. Agriculture" (Sanders, Rosson); and "Social Indicators, Basebook, Baseline, and Indicator Model" (Womack). Other contents include lists of invited poster/display session topics and conference participants. (YLB)

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Increasing Understanding of Public Problems and Policies

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- Public Policy Education in the 1990s
- Agriculture and Environmental Policymaking: Issues, Actors, Strategies
- The Rural Social Infrastructure
- Domestic Consequences of Evolving International Trade Policy

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Subjects Discussed at Previous Conferences

1975 The U.S. Economic System • Energy and Transportation • World Food Issues • Domestic Food and Farm Policy • Public Policy Education in Perspective

1976 The U.S. Political Economy • Food and Agricultural Policy • Impacts of Judicial and Regulatory Decision Making • Energy Policy

1977 Federal Policy Process • U.S. Energy Policy • World Food—U.S. Policy Choices • 1977 Food and Agriculture Legislation • Agent Training and Leadership Development

1978 Food and Nutrition Policy • Policy Options for Small Farms • International Agricultural Trade • The Land-Grant System and Public Policy

1979 Controlling Inflation: Alternative Approaches, Impacts and Implications • Policy Legislative Process

1980 Dispersed vs. Concentrated Agriculture • Ethics of Public Policy • Productivity • Rural Transportation • Energy Policy Issues • Policy Issues and Educational Approaches

1981 Government Programs and Individual Decisions • Public Support of Research and Extension • Agriculture in the 1980s • Methodology of Public Policy Education

1982 Domestic Economic Policy • Federal Government Role in Resource Management • Trade Policy • Financing Government Under Tight Budgets • Food Policy

1983 Economic Transition • Land Ownership Issues and Policy Education Approaches • The U.S. Food and Agricultural System in the International Setting • The Policy Education Process

1984 Federal Deficit • Providing Public Services in an Era of Declining Taxpayer Support • Water Policy • Distribution Issues in Food & Agricultural Policy • Methodology Workshops • Emerging Politics of Food & Agriculture

1985 The Changing Face of America • The Changing Face of Agriculture • Status of 1985 Agricultural and Food Legislation • Tax Policy Revision • Developing Policy Education Programs on Controversial Issues

1986 Balancing the Federal Budget • Effects of Agricultural and Trade Policies on the Competitiveness of U.S. Agriculture • Human Stress and Adjustment in Agriculture • The Food Security Act of 1985 and Public Policy Education for the Future

1987 Socioeconomics of Rural America • Rural Revitalization • U.S. Agriculture in the International Arena • Role of Values, Beliefs and Myths in Establishing Policy • Policy Education and the Policy Process

1988 Policy Choices for Revitalizing Rural America • Priority Issues for a New Farm Bill • Opportunities for Joint Public Policy Education • Emerging Issues in Agricultural and Food Policy • Emerging Resource Issues • International Agricultural Relations

1989 The Global Environment for the U.S. Economy in the 1990s • Family Policy • Rural Development Policy • Public Policy Educatin • Water Quality Policy

1990 An Evolving Public Policy Education • Safe Food and Water: Risks and Tradeoffs • Balancing Environmental and Social Concerns with Economic Interests in Agriculture • Structural Change in Food Industries and Public Policy Issues • Toward a New Europe

1991 Global Competitiveness, Productivity and Social Impacts • Public Policy Education Methods • Policy for Environment and Economic Development • Rural Resource Development and Work Force Productivity • Political Economy of the Dysfunctional Family

Farm Foundation

Increasing Understanding of Public Problems and Policies

1992

- Public Policy Education in the 1990s
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- The Rural Social Infrastructure
- Domestic Consequences of Evolving International Trade Policy

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Farm Foundation, Oak Brook, Illinois
January, 1993

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FOREWORD

This publication reports the major discussions of the 42nd National Public Policy Education Conference held September 20-23, 1992 in Burlington, Vermont. The 158 participants represented most states, the United States Department of Agriculture and other public agencies.

The conference is held to improve the policy education efforts of those extension workers responsible for public affairs programs. This, in turn, should help citizens faced with solving local and national problems make more intelligent and responsible decisions.

Specific objectives were: 1) to provide timely and useful information on public issues; 2) to explore different approaches to conducting public policy educational programs; and 3) to share ideas and experiences in policy education.

The Farm Foundation, following its policy of close cooperation with the state extension services, financed the instructional staff for, and the transportation of one individual from each extension service to, this conference, which is planned by the National Public Policy Education Committee. The Foundation also financed publication and distribution of these proceedings, which are made available to state and county extension personnel, teachers, students and others interested in increasing understanding of public policy issues.

Ira L. Ellis, Chairman
National Public Policy
Education Committee

Walter J. Armbruster, Managing Director
Farm Foundation

January, 1993

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Abstracts

PUBLIC POLICY EDUCATION IN THE 1990s

TO INFORM THEIR DISCRETION: POLICY EDUCATION AND DEMOCRATIC POLITICS

Michael Briand
The Kettering Foundation

Public policy education fails to attend to the importance of a healthy practice of democratic politics. Not only can politics not be abolished, it must be embraced if we are to have effective public policies that enjoy widespread public support. The implication for public policy *education* is that such education must teach *politics* as well as *policy*. But what sort of politics should we have? Not the sort of politics that prevails today, but a collaborative, problem-solving approach that places the responsibility for making choices squarely on the public. The challenge for public policy educators is to supplement their teaching with a practical educational experience that teaches citizens how to build a practice of politics that is both democratic *and* deliberative.

ISSUES, ALTERNATIVES AND CONSEQUENCES

Verne W. House
Clemson University

Public policy educators can rely on the alternatives-consequences approach to insure objectivity in education in the same way researchers rely on the scientific method to insure objectivity in research. Skillful use of the approach requires understanding of the social functions of science, education and politics and the ability to relate these functions to public policy education. It also proscribes the educator from advocating adoption of any particular solution. The policy educator's goal is to increase public understanding, not to seek a particular policy outcome. Some find this definition constraining; the author asserts that it is empowering—and necessary.

THE CASE FOR ADVOCACY IN EXTENSION PUBLIC POLICY EDUCATION

James Hite
Clemson University

The classic, formal, nominally objective public policy education model is a useful disciplinary device, but it straitjackets public policy educators and provides respectable cover for timidity and political cowardice. An intellectually honest policy educator who has carefully studied an issue is entitled to an informed opinion, and it strains credibility to pretend he or she does not. Audiences have a right to know that opinion; and, pedagogically, presentations in which an educator defends a point of view are more likely to engage rather than bore an audience.

LIMITS OF PUBLIC POLICY EDUCATION

James C. Barron
Washington State University

Are extension policy educators as unbiased as they claim or think themselves to be? What constitutes neutrality? Is the issue *education* versus *advocacy* or, as Alan Hahn suggests, *balance* versus *bias*? Does the selection of the target audience influence income? Do policy educators have a responsibility to include a broader set of interests and seek out and involve audiences that have no process through which to register their interests and preferences? Have centralized decision making and government professionals taken the American citizen out of the policy process? These are questions all public policy educators should ask themselves.

AN EXTENSION LAY LEADER'S REACTION TO THE MORNING PROGRAM

Mary Grezaffi
National Extension Committee

Two programs illustrate the success of public policy education in coalition building and fostering public confidence: Agromedicine: The South Carolina Experience, established in 1984, combines the resources of the land grant and medical campuses to promote agriculture and consumer health and safety. The founders stress maintaining objectivity. A 1991 Louisiana act calls for a review—by the Louisiana State University Agriculture Center and the Louisiana Department of Agriculture and Forestry—of any actions by the Louisiana Department of Environmental Quality (DEQ) affecting farming.

The act was born out of a coalition of diverse entities from state and federal government and the private sector and calls for appointment of a liaison between DEQ and the agriculture industry. These two programs illustrate that public policy education is essential to the long-term viability of production agriculture.

AGRICULTURE AND ENVIRONMENTAL POLICYMAKING: ISSUES, ACTORS, STRATEGIES

AGRICULTURE AND THE ENVIRONMENT IN THE 1990s: CHANGING SETTING AND CHARACTERISTICS

Jeffrey A. Zinn
Congressional Research Service
Library of Congress

National agricultural policy will be increasingly influenced by environmental factors and interest during the rest of this century. Reasons for increased influence include changes in Congressional structure and make-up; funding constraints caused by the growing federal budget deficit; the imposition of more special places where land owner actions are limited because of designated values such as endangered species habitat or wetlands; changes in the three key groupings of players in the Congressional arena (commodity coalition, conservation coalition and Congressional members and staff); and possible changes at the U.S. Department of Agriculture. The paper concludes with both specific predictions and general observations about anticipated changes.

RIGHT VERSUS RIGHT—FINDING COMMON GROUND

John Campbell
Ag Processing, Inc.

Agricultural and environmental advocates make equally compelling claims regarding the righteousness of their cause. North America was developed under pro-development public policies. In a short period of American history, environmental policies have become an equal and opposite public policy force.

Agricultural advocacy is stuck in a period when rural population and legislative representation equaled or exceeded urban and suburban population and representation. General farm organizations are spread too thin. Specific commodity organizations are focused on issues of less and less importance. Farm advocates have generally let the environmental challenge go unanswered. Strategies for the future include leveraging changes in the social contract between agriculture and society into greater benefits for the farm sector.

AGRICULTURE AND ENVIRONMENTAL POLICYMAKING: ISSUES, ACTORS AND STRATEGIES—STATE GOVERNMENT PERSPECTIVE

Karen Armstrong-Cummings
Kentucky Natural Resources and Environmental Protection Cabinet

Major international debates continue in environmental and agricultural arenas. All facets of resource management expand the issues, providing opportunities for both conflict and consensus. The actors have increased substantially in two shifts. First, as support grows more localized, environmental concerns no longer reside only with national groups. Second, governmental action has shifted from national efforts, with local governments now providing the forums. These changes provide an opportunity for bringing communities together through local strategies. Officials have the opportunity, and a real responsibility, to implement proven mechanisms.

INNOVATION IN ENVIRONMENTAL POLICY EDUCATION THROUGH COALITIONS: THE GROUNDWATER POLICY EDUCATION PROJECT

Charles W. Abdalla
Pennsylvania State University

The Groundwater Policy Education Project's goal was to strengthen state and local public decision makers' abilities to formulate policies for managing groundwater resources. A package of educational resources was created and utilized in projects conducted by coalitions in seven states. Several projects achieved significant outcomes related to changes in the policy process and issues. Characteristics of projects found to be associated with such outcomes included: an appropriate scale; coalition diversity; effective project leadership; and attention to process issues. The results suggest that while they require significant effort to build and maintain, coalitions can, under certain conditions, improve environmental policymaking.

INITIATING A COALITION FOR GROUNDWATER POLICY EDUCATION: OBSERVATIONS AND LESSONS FROM A RURAL IOWA COUNTY

Steve Padgitt
Iowa State University

A coalition approach to public policy education in rural Iowa at the local level is described. Efforts to organize and implement the proj-

ect among organizations with disparate interests and sometimes marginal interest in groundwater were met with modest success. Implications for conducting public policy at the grassroots level by initiating a coalition of organizations are discussed. Although there are benefits to coalitions, they may require high organizational maintenance inputs. As a result, the coalition approach may be problematic in rural settings, especially if the coalition is narrowly defined to a single policy issue.

GROUNDWATER POLICY EDUCATION PROJECT: NORTH CAROLINA

Leon E. Danielson
North Carolina State University

The North Carolina pilot project of the Groundwater Policy Education Project was designed to improve state and local groundwater decision-making quality. It included a two-day, state-level conference for state and local elected and appointed officials, environmental interests, consulting firms and the general public; and a county-level, coalition-building education and public policy development project with a multi-disciplinary citizens groups in Gaston County, North Carolina. Close adherence to the principles of public policy education and coalition building produced increased knowledge, improvement in coalition-building skills, feelings of empowerment, increased willingness to listen to divergent points of view and other similar benefits.

EMERGING RURAL FARM-NONFARM CONFLICTS: WHOSE PREFERENCES COUNT?

Luanne Lohr
and
Lynn R. Harvey
Michigan State University

Conflicts over land use arise because individuals expressing different preferences claim property rights to the same good associated with the land. Suburbanization of agricultural areas has brought individuals from nonfarm backgrounds into contact with the rural farm environment, often for the first time. In responding to the subsequent conflicts, state governments have tended to affirm farmers' preferences with right-to-farm laws. Local governments have begun to support nonfarmers' preferences through restrictive zoning ordinances, particularly targeting intensive livestock operations. Public policy educators may facilitate conflict resolution by insuring the preferences of all relevant parties are considered in the context of community goals.

WETLANDS AND ENDANGERED SPECIES: EDUCATIONAL ASSISTANCE NEEDS OF EXTENSION EDUCATORS

Verne W. House and Michalann Greenway
Clemson University

Our nationwide survey of U.S. extension educators revealed their expectations and needs for the public policy issues of wetlands and endangered species. Wetlands and endangered species issues will continue to be hot topics during the next two to three years, evolving around financial and legal aspects and basic values such as property rights. Extension educators expect to be involved in wetlands and endangered species issues and the survey revealed a high level of demand for assistance.

RESOURCE ISSUES AND OPTIONS—RIO: A COORDINATED APPROACH TO EDUCATION ON NATURAL RESOURCE ISSUES

David A. Cleaves
USDA Forest Service
Southern Experiment Station

A. Scott Reed
Oregon State University
Forestry Extension Program

A new large-scale public education program in forest resources rests upon the issue of endangered species but focuses on root causes of concern over resource management alternatives. An approach to more coordinated and comprehensive outreach from the university is described. Recommendations are made regarding development and cultivation of process skills in extension educators and desired administrative behavior. Future challenges include involvement of non-extension faculty; encouraging extension faculty to work outside of their comfort zones; and creating appropriate relationships with other units already dealing with related issues. We believe the general strategy described could be institutionalized in colleges of forestry, natural resources and agriculture. Specific issues such as endangered species would be handled within this framework.

PUBLIC POLICY EDUCATION FOR WETLANDS ISSUES

Leigh Taylor Johnson
University of California Cooperative Extension

Public policy education, the National Issues Forum and mediation techniques were used to educate about wetlands issues. The Univer-

sity of California Cooperative Extension "Ladder for Policy" was used to assist groups in identifying goals and alternatives, examining consequences and making choices. National Issues Forum background research, education and deliberative discussion methods strengthened early steps of the policy ladder. Mediation human relations techniques were used to establish and maintain a constructive atmosphere. These techniques were applied in projects dealing with San Diego Bay water quality issues and agriculture and coastal nonpoint pollution in San Diego County.

THE RURAL SOCIAL INFRASTRUCTURE

REINVESTING IN THE SOCIAL INFRASTRUCTURE OF COMMUNITIES

Lynn R. Harvey
Michigan State University

Slowing growth in state and local government revenues has forced policymakers to adopt a variety of strategies to balance strained budgets. The tight budget conditions of many states and local units have resulted in human and capital infrastructure investments declining while consumption-oriented investments increase. The change in investment strategies brought about by declining fiscal capacity comes about at a time when the demand for human service programs are increasing. Public policy educators have the opportunity to assist state and local decision makers design strategies to cope with the deteriorating financial condition of public budgets through public official training; promote collaboration of human service agencies for delivery of programs; and assist citizens through public policy education to understand key fiscal issues.

THE STATE OF THE RURAL HEALTH CARE SYSTEM

George R. McDowell
Virginia Polytechnic Institute and State University

As one examines the health care system in the United States and in rural America, it is very easy to make seemingly outrageous statements and use expletives that may subsequently need to be deleted. That is because the U.S. health care system is simply outrageous. It is outrageous in the way those with vested interests promulgate a set of myths about it. It is outrageous in what it costs us as Americans by comparison to health care systems in many other countries. It is also outrageous in the amount of waste, and in the excessive cost of administering the system.

There is a problem in deciding just how we should frame the public policy question being examined. For example, is the issue to be discussed a question of the disparity between the health care available to rural people as compared to the rest of the society? In this context we might examine alternatives for rural people that would seek to bring the services available to them more into line with the general societal norm. Alternatively, is the issue one in which the care available to rural citizens is simply further evidence of dysfunction within the entire system? Under this framing of the question, the care in rural areas is simply additional variance within the system and the promising alternatives for rural people may be the same as for everyone else in a system needing massive system-wide change.

If I can refine our understanding of the rural health problem in just this limited way, I may have helped.

ALTERNATIVES AND CONSEQUENCES OF HEALTH CARE PROTOTYPES AND DEVELOPING A PUBLIC POLICY EDUCATION PROGRAM

Marsha D. Fretwell, M.D.
Aging 2000, SJS Inc.

Marian S. Feeney
University of Rhode Island

Health care is an issue that touches all of us. And many experts think our health care system is breaking down. Polls reveal most Americans are dissatisfied with the system, but are satisfied with their own personal health care. The American public is concerned. A 1991 Gallup poll found that 91 percent of Americans believe we face a national health care crisis, and 85 percent feel the system needs reform (Aging 2000, 1991b, pp. 3-1). Much of the literature indicates the need for *a health care system approach*. A review of literature identifies many specific issues, to name a few: managed competition, universal access, cost containment, preventive component, voucher to negotiate with insurer, tort reform for medical malpractice, administrative simplification, "kiddy care" program, private market approach, employer-based approach, and government-based approach. But few take a systems approach to studying our health care system. This paper discusses one such system. Aging 2000 began in November of 1989, when a group came together to study ways to improve health care in Rhode Island. The group focused on health care for the elderly. But the detailed analysis of care for the elderly can yield improvements for the system as a whole.

RURAL ELEMENTARY AND SECONDARY EDUCATION: FUNDING AND ALLOCATION ISSUES

Bob F. Jones and Kevin T. McNamara

Education policy is a critical issue in the 1990s following a decade of discussion and reform throughout the nation. As rural leaders enter the debate in the 1990s, two concerns should be foremost in their minds. How can rural communities, experiencing declines in their population and tax base, secure funds to provide students with a competitive education? And, what can school administrators do to increase efficiency in the allocation of education resources? This paper examines funding and allocation issues, presents policy options for funding rural schools, and summarizes research that examines returns to school inputs in a production function framework.

DOMESTIC CONSEQUENCES OF EVOLVING INTERNATIONAL TRADE POLICY

HOW NAFTA WILL AFFECT AGRICULTURE IN THE UNITED STATES: REGIONAL IMPACTS

Daniel A. Sumner
Assistant Secretary for Economics, USDA

This paper outlines the North American Free Trade Agreement (NAFTA) and discusses regional effects. The NAFTA negotiation establishes free trade among the United States, Canada and Mexico. It will reduce tariffs to zero for almost all products and improve access for services and investment. U.S. agricultural exports are expected to be $2.0 billion higher than without NAFTA by the end of the transition. Livestock, meat and grains will account for much of the expansion. Cash receipts in agriculture will be about 3 percent higher. The NAFTA will benefit all regions of the American economy. The gains in rural areas will result from both increased demand for agricultural commodities and improved economic prospects outside agriculture.

INTERNATIONAL TRADE POLICY: CHALLENGES AND OPPORTUNITIES FOR U.S. AGRICULTURE

Larry D. Sanders
Oklahoma State University

Parr Rosson
Texas A&M University

The time when farm producers and agribusinesses could ignore the world beyond the county line and hope for a profit is long past. Rapidly changing events such as changes in the geopolitical structure of regions are altering production, consumption and trade patterns. International trade policy is also evolving to reduce subsidies and barriers to trade and, in some cases, create artificial advantages in the global market.

Such actions have already brought challenges of maintaining profitability or basic survival to U.S. agriculture. Producers, agribusinesses and public service and support agencies (including land grant universities) will be put to the test over the next decade as the world around them forces change. Agriculture and its institutions will sustain themselves, but the forms they take are by no means certain. The purpose of this paper is to identify some of these challenges as well as opportunities available to the U.S. agricultural sector and related institutions.

SOCIAL INDICATORS, BASEBOOK, BASELINE AND INDICATOR MODEL

Abner W. Womack
University of Missouri-Columbia

This paper is about the implementation of a basebook, with social indicators plus a modeling and intellectual interface process for downstream projects (baseline) for rural communities. It is based on several meetings with researchers in the Rural Policy Research Institute (RUPRI) plus Glenn Nelson's social indicator paper of September, 1991.

Public Policy Education in the 1990s

TO INFORM THEIR DISCRETION: POLICY EDUCATION AND DEMOCRATIC POLITICS

Michael Briand
The Kettering Foundation

> *I know no safe depository of the ultimate powers of the society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion.*
>
> —Thomas Jefferson

Charles Anderson has written that,

> *although all theories of policy science recognize that public decision is a social process, the clear implication of their teaching seems to be that the best course of action can be ascertained within the mind of any single person who analyzes the situation logically and dispassionately* (p. 34).

If this is so, it follows that, in principle, at least, there is no need for a social decision-making process. No need, in other words, for politics. And, indeed, this is precisely what many scholars in the policy sciences still appear to believe. According to Douglas Torgerson, for example, the impetus behind the popularity of rational choice theory in public policy is "a dream of the abolition of politics—of putting an end to the strife and confusion of human society in favor of an orderly administration of things based upon objective knowledge" (p. 34).

I want to suggest that politics not only cannot be abolished, it must be embraced if we are to have effective public policies that enjoy widespread public support. The implication for public policy *education* is that such education must teach politics as well as *policy*.

Trouble in River City

Let's consider a hypothetical community somewhere in the United States—call it "River City." River City is Anytown, USA. In most respects, it is like numerous other American communities. Like other communities, River City finds itself confronted with hard-to-solve problems: violent crime, pollution, traffic congestion, homeless peo-

ple, overflowing landfills, declining educational performance in its schools, a faltering economy and growing unemployment, drug use, deteriorating roads, bridges and sewer systems. What is most disturbing is that these problems seems to defy solution. The community's leaders cannot agree on what to do about them. What they once agreed on and tried hasn't worked. Now they just seem stuck, unsure what to do next. As a result, people are not sure their community will ever begin making headway in dealing with these problems. Some people expect steady decline, others see crises looming. Everyone is worried.

To compound matters, the policymaking process in River City has grown more adversarial, polarized, intemperate and personalized. The confusion and paralysis in government has dismayed and angered the public. People are frustrated and impatient. They feel neglected—except at election time. Disgusted with the way they are treated, few bother to vote anymore. They staunchly resist higher taxes, in large part because they think their official leaders will misuse the extra revenue. They demand immediate action and tangible results, but do not take the time to study the issues and arrive at considered judgments. They are content to express their preferences and irritations through opinion polls, letters to the editor, radio call-in shows and appearances at public hearings, wherein they make sure public officials understand the new landfill will not be put within spitting distance of *their* backyard.

Now, not every community is River City, of course. Some seem to enjoy a fair degree of success in dealing with their problems. In those communities, it seems the quality of public decision making is high. There is no shortage of "experts" on policy matters who seem to know what to do and how to get it done. But, for the most part, the policy-making process in the United States today is divisive, adversarial and unproductive. As Lawrence Susskind and Jeffry Cruikshank observe in *Breaking the Impasse*,

> *in the United States, we are at an impasse . . . .Whenever [our] leaders try to set standards, allocate resources, or make policy . . . we can expect a fight . . . .When frustrated officials try even harder to impose their wills, more intense versions of the same disputes are likely to erupt. The "laws" of public policymaking tend to parallel the laws of physics: for every imposed action, there is an equal and opposite reaction.*

It takes only a glance at the multitude of disputes raging today in our legislatures and courts, in the news media and in our communities to confirm Susskind and Cruikshank's observation. A moment's reflection reminds us just how contentious and unproductive our public decision-making process has become. Whatever the problem, we can be sure of one thing: if a dispute arises, the problem will go unsolved.

Why is it that, despite all our knowledge and all our resources, these pressing social problems so persistently defy solution? Well, maybe, in expecting to solve such problems, we expect too much. Maybe they do not have solutions. Even scientific problems do not necessarily have solutions. For example, we might never achieve the elusive goal of a controlled "cold" nuclear fusion reaction that would produce safe, limitless electrical power. If some problems simply cannot be solved—and there is nothing written in the stars that guarantees every one can be—it is only wise to guard against immodest expectations. On the other hand, as Thomas Edison demonstrated in his quest for a workable light bulb filament, we cannot be certain a problem will never be solved. So we have reason to keep trying.

But social problems differ from scientific and engineering problems in a way that makes them much tougher nuts to crack. The difference can be summed up in two words: human beings. The human world we create differs from the physical world in one crucial respect: its variability. Unlike physical phenomena, human beings do not behave according to invariable and universal laws.

Variability in human life stems, in turn, from three fundamental kinds of diversity: diversity of experience, diversity of individual constitution and diversity of response. No two persons—or communities or societies—are exactly alike. In large part, this individuality results from the unique set of circumstances to which each of us is exposed throughout his life. Whether it is an individual or a group, conditions vary from place to place and over time. Add to this variability the diversity of characteristics—dispositions, sensitivities, capacities, etc.—that constitute each person or group, and the result is individuals and communities that are, to a substantial degree, unique.

These two types of diversity mean that ascertaining "the facts" of a situation is anything but straightforward. Indeed, with respect to some of our most vexing social problems, there may be no such things as "the facts," if by that phrase we mean statements about what exists or what is true that any well-informed, reasonable and careful-thinking person must accept. Often there are only "facts-as-interpreted"—beliefs that are influenced to their core by the interpreter's experiences, perceptions, dispositions, needs, desires, interests, biases, pre-existing beliefs, priorities, and so forth.

But there is also another important source of diversity: the great variety and unstructured nature of things human beings consider good, valuable or desirable. The activities and ways of life humans value are almost as plentiful and various as people are. In any given situation, two or more of these "values" can come into conflict. When they do, it sometimes proves impossible to obtain or enjoy one without having to do with less of, or go without, one of the others. Which should I value more: clean air and my health or the conven-

ience and freedom that driving myself to work affords? I face a dilemma—a hard choice.

The fact that choices have to be made is not news to anyone in the field of policy studies, of course. Indeed, the notion of choice is at the center of the discipline. I want to suggest, however, that taking the idea of choice seriously entails a *social* decision-making process, one in which individual preferences are formed *through* the process rather than merely "fed into" it.

In the first place, I would argue, I cannot know what *I, as an individual*, want most, what is most valuable for *me*, until I am confronted with the necessity of choosing. If nothing causes me to reflect on my initial desire or preference, it is possible that I will end up realizing a lower level of satisfaction than I might otherwise. It might be that I would *really* prefer something else. But if I do not stop to weight the alternatives, if I go along unreflectively with my first inclination, I will not have a chance to find out. Acting unreflectively on a desire or preference I happen to have is *not*, I would argue, a genuine choice.

How, then, do I insure that I make such a choice? How do I expose myself to alternatives and their consequences so I will have the opportunity to assess the costs and benefits? The best way—perhaps the only way, given my own limited experience and information—is to consider what other people desire, and why. By listening to the arguments offered by others in support of their preferences, which conflict with mine, I at least gain the opportunity to make a genuine choice. This implies that I need to engage others in a process that provides for exchange of information, ideas, arguments, experiences, and so forth. Such a process is essentially *political*.

A second reason for claiming that choice requires social interaction is that what is true for me as an individual applies with even greater force to us collectively, as communities and as a society. Simply to mechanically add up—to aggregate—desires or preferences is not, from a collective point of view, to *choose*. This is especially so if those desires or preferences have not been reflected upon—that is, if they are not the product of genuine *individual* choices. But it is equally the case even if they *are*, because at the *collective* level of choice, there is no *collective* recognition of alternatives, no *collective* weighing of costs and benefits. Preference aggregation—as embodied, for example, in opinion polls, referenda and majoritarian legislative procedures—is not a mechanism for making a social decision so much as it is for taking a short cut to such a decision—or even avoiding it altogether. Again, I would argue, a genuine choice requires social interaction: the exchange of information, perspectives, arguments, and so forth. In the absence of *political* engagement, there is no choice, but only a poor substitute for it.

My third point is this: There are some kinds of value that cannot

be realized *except* through political exchange and interaction. The answers to nondistributional issues—whether there is or ought to be a right to privacy, for example—cannot be authoritatively supplied by the mere aggregation of preferences. In such cases we need to reason our way, together, to a judgment. The same goes for issues such as the form of decision-making itself. Should we permit a market to allocate resources, or should we do so on some other basis? The question calls for a genuine choice, a decision, based on our collective wisdom. What form of government should we have—presidential or parliamentary? Republican or plebiscitary? Again, the question calls for discussion, deliberation and decision. What sort of community shall we have? What is our vision for our future? What kinds of citizens do we wish to produce? What should our priorities be? Such questions bid us to *talk* with each other and *choose, together*—not just tote up our unexamined, unchallenged preferences.

I would argue that every social problem poses a hard choice. No matter what we do there will be undesirable consequences as well as desirable ones. There will be undesirable consequences because we value a variety of things, and these things often come into conflict. Which should we value more: clean air and our health or the convenience and freedom that driving our own cars affords? Which should we give priority: the air that would be polluted by burning our trash or the ground water that would be contaminated by burying it? Which should we save: the jobs a new factory would provide or the green belt that shields our homes from the harshness of asphalt and skyscrapers? This is what makes social problems so hard to solve. When good things come into conflict, it sometimes proves impossible to obtain or enjoy one without having to do with less of, or go without, one of the others.

In such situations, it is bad enough that I feel torn between equally appealing (or unappealing) alternatives. The choice is doubly tough because typically there is nowhere to turn for a definitive answer. There is no principle, no rule of thumb, no wise and benevolent authority that will tell me what is best to do. *Such choices have no theoretical right answer.* I have to use my judgment—what Jefferson called "discretion"—in effect, make up the rules as I go.

If it is impossible for *anyone*, when faced with a hard choice, to know for sure which of several good things he ought to give priority, think how tough it is for a community or society to reach a sound decision. In the absence of clear and compelling guidelines for establishing priorities, and given the variability of constitution and experience among individuals, it is not surprising that people differ considerably in their judgments about what good things ought to be favored in instances of conflict.

So conflict between the things people *value*—conflict everyone experiences within—frequently underlies differences between *persons*. True, people can end up in disputes for all sorts of reasons—person-

ality conflicts, injuries done by one to another, miscommunication, and so forth. But an important source of conflict between persons (and hence between groups of persons) is the universal experience of conflict between things people value, an experience that occurs within each of us. Each of us has a different view of the situations we confront. If in such situations we face a hard choice between valuable outcomes, we have to rely ultimately not on facts or reason, but on judgment. Conflict is inevitable because *no one* can *know* what is best to do—even for her or himself, let alone for everyone affected. Social problems are thus political problems—problems that in their very nature elicit diverse and, often, conflicting responses.

Let me emphasize that in calling social problems "political" I do not mean they necessarily have to be addressed by *government*. Nor do I mean that what we usually think of as "politics"—self-interested competition for advantage—causes these problems. And I do not mean there is no place for careful, thorough, rational analysis and prescription in politics. What I mean is that, because human responses to life are inherently diverse, the conflicts that flow naturally from this fact are not susceptible to any single correct, best, or "most-rational" solution that can be identified independently of a social decision- making process. A solution must be created, generated through the process itself. In other words, the solution, like the process, must be political.

Thus far I have been making a theoretical point. There is also, however, an intensely practical point that will be evident to anyone involved in policymaking. It is this: Actions that might be taken in response to problems that touch many or all of us inevitably will have consequences that affect some people adversely. Proposals to take action thus prompt opposition and lead to disputes. Anyone left out of the decision-making process can be expected to oppose the decision that is reached.

Recently I read a report in *Harper's* magazine that illustrates this point. A rural county in West Virginia was suffering from serious unemployment and underdevelopment. County officials considered and pursued several policies designed to bring jobs and money into their area, but without success. Eventually a proposal came to them to create a landfill for out-of- state solid waste. The county studied the proposal carefully and, only after thorough consideration of the costs and benefits, decided to go ahead with the project. At the last minute, just as the contract was about to be signed, a protest movement materialized. What previously was a policymaking question turned into a political battle, in the worst sense of that term. In the end, the project had to be abandoned and the county is now back to square one. I couldn't help thinking as I read this report that, if the decision-making process had been fully public, inclusive and deliberative from the beginning, the outcome might have been much more satisfactory for everyone.

The moral of this story is that, in such a situation, any solution that stands a chance of being both effective and supported widely must emerge from a decision-making process that enables everyone affected by the problem and the attempt to solve it to feel they have been able to influence the decision so it is acceptable to them, making it possible for them to go along with it. For reasons of both fairness and effectiveness, this decision-making process requires a collective judgment incorporating the perspectives and concerns of everyone and that draws on everyone's experience and abilities. In short, no one can take care of a community's business—no one can set a direction for the community—except the community itself. The form of decision making we require in order to take care of that business must itself be political. In short, we need *politics*.

But what kind of politics? Certainly not the sort we have. In 1991, a study conducted for the Kettering Foundation, entitled *Citizens and Politics*, reported that members of the public are frustrated by and angry about politics in our country today. Americans feel pushed out of the system in which they supposedly have the right and responsibility to govern themselves. These folks are repelled by ideological politics, by what William Schneider has called the "crusading style" of both liberal and conservative intellectuals and activists. They dislike the adversarial, quasi-religious brand of politics because it divides people instead of encouraging them to work together. They believe all Americans should be able to live together within a framework of mutual civility and respect for persons and their basic rights and liberties. Such a framework "works"—it is "practical." In contrast, politics as it is currently practiced appears "ideological"—it is divisive, adversarial and unproductive. It "does not work."

A Misleading Metaphor: The Community as a Market

When you stop and think about it, public life in our communities today looks a lot like the world of the private economy we are all familiar with. Although the (often nostalgic) ideal of community life remains one in which people treat each other as friends and neighbors—almost like members of an extended family—the hard fact is that we approach each other impersonally—even warily—keeping our fellow citizens at arms' length. This is revealing because this is the way we behave in commercial transactions. In the public life of our communities today, just as in an economic market, people are preoccupied with the competition in order to realize their particular interests and desires. They try to satisfy these by "buying" the goods and services they want from the "producer" of these goods and services—in this case, government. Citizens are "consumers" of what government can provide.

So public life gets reduced to the question of "who gets what, when and how." The "community" is nothing more than a loose col-

lection of individuals and groups, each with opinions, preferences and positions that have to be accommodated. The assumption is that there is no *common* or *public* good or interest apart from what emerges from a fair competition among *particular* interests. As in an economic market, the best result is the one that, roughly speaking, comes closest to satisfying every individual's and group's desires. The assumption that there are only particular desires and interests of individuals and groups in turn leads us to rely on decision-making procedures such as majority rule, which merely adds up people's preferences and bases policy on what the majority wants—modified, of course, by such concessions as those in the minority can compel it to make.

Hence the emphasis on the power to influence policymakers who have the authority to make decisions. If the community is like a market, then the people who occupy official positions end up having to act like brokers or agents. The demands we place on elected officials turn them into experts at "working the system." Their "leadership" consists of using governmental authority to serve "the customers." An effective "leader" is someone who can "deliver the goods." A popular "leader" is someone who can respond to the wants of as many individuals and groups as possible without upsetting others. In reality, "leadership" amounts to a talent for selling people the line that their wishes will be fulfilled, even though (it goes without saying) everyone has to compromise and some may even have to lose.

Perhaps we do not get the sort of leadership—and leaders—we *really* need because we have forgotten something important about politics: in a democracy, government is supposed to be not only *for* the people, but *of* them and *by* them as well. This is not to suggest that we should, or can, do away with government. Quite the contrary. Government is indispensable. But it is to suggest that we ask ourselves whether government can operate effectively in the absence of a form of public life that, unlike the market version currently prevailing, places the responsibility for sound public decision making squarely on the shoulders of the citizens.

Community Problem-Solving and Self-Leadership

The market assumptions that have insinuated themselves into our efforts to address community problems prevent us from dealing with conflicts between the things we value. They keep us from reaching solutions to the problems we face collectively. Why? Because they obscure the fact that, in addition to particular interests, we have a shared interest in obtaining those public goods that only we, acting together, can produce. Because only citizens acting together can produce such goods, neutral decision-making principles, such as majority rule, do not suffice. Such rules can deal only mechanically with the competing interests and desires people have. They can ag-

gregate them—add them up—but they cannot integrate them—they cannot reconcile the things that are important to people without compelling someone to lose. Only *people* can integrate conflicting interests.

Public problem solving requires a form of political interaction that is less adversarial than the sort that characterizes the market version of politics. The hard work—and it is hard work—of making tough choices demands frank, open, realistic, but civil talk among citizens. Only talk of this sort will build an integrated public perspective out of fragmented partial perspectives, and, hence, create a basis for decisions that everyone can live with.

What conception of political "expertise" follows from this contention? Clearly, when public problems—racial tensions, drug abuse, poverty, crime, economic stagnation, environmental pollution, etc.—arise, simply having the authority or power to influence public decisions does not guarantee that solutions will be effective or widely supported. Problems such as these require citizens to work together—to do the hard work of making choices based on a shared perspective. This suggests that political expertise is the ability to get people to work together to solve public problems. Specifically, it is the ability to help members of the community

- define their problems from a shared, *public* perspective,
- recognize the costs and consequences of different courses of action,
- work through conflicting reactions to those consequences, and
- make the hard choices that every issue poses.

The purpose of political expertise, on this view, is to improve a community's ability to understand the hard choices it must make and to work together toward a public judgment. An effective public leader will realize that the solution does not lie outside the public, but within it; what should be done becomes clear only as members of the community deliberate together. Effective political leaders do not assume the problem is already defined, but solicit a variety of perspectives and seek to integrate them into a new, genuine community perspective on the problem. They depersonalize politics and encourage people not to trust them—or each other—but only to work together to solve the problem everyone confronts.

Effective political leaders, then, need not so much facts, analyses, options and plans as the "know-how" required for public deliberation. They face up to hard choices instead of avoiding them and call the attention of their fellow citizens to the inescapability of those choices. They enable them to work through their own conflicting feelings about what should be done and help them weigh their priorities fairly against those of their fellows. They encourage everyone to begin thinking *together* about which consequences are accept-

able and which are not and about which courses of action everyone can live with. They do not seek authority for themselves, but try to disperse it among their fellow citizens. They work not for short-term gains and immediate results, but for the long-term goal of changing the way the community conducts its business.

The Challenge for Public Policy Education

Public problem solving is a practical activity. It is an "art," and like other arts it rests on knowing *how* to do something. To learn the dispositions and skills—to acquire the "know-how"—needed to practice public problem-solving, people must act. The feeling of empowerment that enables people to take effective action comes only with experience in dealing with real problems in actual situations.

If community problem solving can be learned only by acting with other members of the community, then political *leaders* must begin—and end—as ordinary citizens. If would-be problem solvers do not learn the dispositions and skills that every citizen must acquire through experience, they will be in no position to assist others in developing the know-how that community problem-solving requires. A leader is nothing more, then, than a citizen who has developed this know-how well enough to foster, through examples, its development in his fellows.

Indeed, a political leader will never cease being a citizen. Having learned his civic dispositions and skills as a member of the public, he will understand that a person who is not immersed in the community cannot lead it. A community leader is one who helps the community finds *its* voice and set *its* direction. Without being well integrated into that body of citizens, a would-be leader cannot know what the community thinks and what it wishes to do.

The challenge for public policy educators, I would submit, is to supplement their current teaching with a practical educational experience that teaches young Americans how to practice democratic politics. The study of public policy is a necessary but not a sufficient condition for the development of effective political leadership and, hence, for the flowering of our public life. For such leadership to grow, the seed must be planted in fertile ground. The political ground in our communities and country is rocky and barren. It needs reviving and cultivating. Unless our young people are prepared to transform the political desert into an oasis in which the seed planted by policy studies can take root, there is little point in teaching them what, in theory, ought to grow there.

We Have Met Our Leaders and They Are Us

Is there reason to hope we can transform politics—render it more like the problem-solving described above and less like the quasi-

market activity that currently dominates our public world? The report *Citizens and Politics* suggests there is. Although Americans express irritation and dismay about public life, many remain actively involved in addressing the problems that concern them. When they have a real chance to have an effect on these problems, citizens take responsibility for addressing them.

This isn't surprising. As political analyst William Schneider has observed, most Americans are "pragmatists." They believe that "what works is right." They support policies—and policymakers—that produce results. But at some level they understand that, in the end, only citizens can make a democracy work. As a recent political cartoon put it, "We the People of the United States . . . are still in charge of making it work." The challenge is to "inform their discretion" by teaching them how to revive a healthy practice of participatory, deliberative, democratic politics.

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ISSUES, ALTERNATIVES AND CONSEQUENCES

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Milestones in Public Policy Education

More than sixty years have passed since Purdue professors Carroll Bottum and Heavy Kohlmeyer invented what is known as the alternatives-consequences approach to public policy education. Necessity was truly the mother of this invention. I see the history of public policy education marked by five milestones with theirs being the first.

Milestone 2 occurred in 1949-1950 when M. L. Wilson, then director of federal extension work and Frank Peck, director of Farm Foundation, convened policy educators at the first National Public Policy Education Conference. Wilson set the philosophical tone, quoting from a Land-Grant College Association report: "It is not the function of this Committee . . . to determine what agricultural policies shall be adopted. That is the responsibility of the Nation's citizens" (Wilson, p. 9).

Milestone 3 came along in 1973 when Charles Gratto taught us his Issue Evolution-Educational Intervention Model. It gave us a visual way to both differentiate and relate politics and education.

Milestone 4 began in 1975 when public policy education was taught to county agents and specialists in home economics and community development, making it obvious that the methodology applies across disciplines and program areas.

Milestone 5—the decade of the 80s—was when literature emerged to document the processes used to educate about public policy (House and Young, Infanger).

Will today be another milestone? Perhaps not, but I predict that the 1990s will be the time of adapting our methods to modern communications and politics. Now that the methodology is in print and the extension system is urging us to employ it, strengths and limitations are being discussed. Some people do not want to use it and that, I suppose, is how Dr. Hite and I came to be on your agenda this morning. There are many reasons for this aversion, some of them captured in the paired articles by Cunningham and me in *Adult Edu-*

cation (Cunningham, House 1990b). Some suspect anything this old must be outdated. For some people, education is just too slow compared to politics. Others tell me that the focus is too narrow. But the most damning is that objectivity is actually a "cop-out," an avoidance of social responsibility.

I have been a good listener; now it is my time to speak. I predict that by 1995, policy educators will have learned new skills in communications and mediation and we will have re-examined the costs of advocacy and embraced objectivity. Policy education may be a part of "public issues education"—or it may not. Regardless, the alternatives-consequences approach will remain the essence of educating about controversial issues. If it does not, the extension system will simply be an information branch of the U.S. Department of Agriculture and our educational function will have been truncated.

Those are my milestones and my predictions. My paper covers just three topics. First, so that we all understand the alternatives-consequences approach, I will review it briefly. Second, I will compare and contrast the social functions of science, education and politics and various policy roles played by academics. Third, I will explain why, when we are dealing with controversial issues, objectivity is essential, not just objectivity in science but also in education.

The Alternatives-Consequences Approach

The alternatives-consequences approach is simple:

1. *Define the issue as a problem.* Issues divide us, but problems are something we can solve. Language matters. For example, people are divided pro and con by simply hearing the words abortion or family planning. But, except for a few backwaters, "preventing teen pregnancy" can be used to engage the public in solving what is perceived to be a common problem. Defining the problem also requires doing some research to understand its motive and extent.
2. *List the alternative solutions.* Include the status quo.
3. *State the consequences of each alternative.* Communicate research results.
4. *Educate.* Create interaction.
5. *Fade.* Move into the shadows. Go work on something else.

It is that simple. Yet, the alternatives-consequences approach empowers us to proceed with education when the context is dominated by controversy. Think about it. People who are angry listen. We can defuse emotion. We can depersonalize the conflict. We can apply research to real problems. Each interest group wants us to publicize *their* solution, but if we are fair to all propositions (including the status quo) they will let us redistribute power in the form of under-

standing. We help them confront the issue with problem-solving processes. We give them the best information we have. We help them discuss it rationally with their neighbors. We are empowered by their willingness to learn.

The alternatives-consequences approach is also demanding. It presumes we want to be teachers and are not afraid to work directly with the people. That is quite different from, for example, penning pithy policy prescriptions from the safety of one's office or using television to project one's views while enjoying the insulation of one-way communication. Yes, the alternatives-consequences approach lets us work directly with the people, but we have to follow the rules. We have to distinguish among education, science and politics and relate these to policy roles we academics play.

Education ≠ Science ≠ Politics

Social Functions of Education, Science and Politics

That education, science and politics have different social functions is no revelation, but it is worth taking a few moments to consider how these differences affect what we can do with public policy. Education is *human* development. Science (research) is *information* development. Politics is *policy* development. In the heat of public policy education, they are alloyed so they may appear as one. But they differ in purpose and methods so we need to compare them.

Education requires the interaction of four elements: learners, leaders, content and context (Liles, et al., pp. 7-12). Learners are our students; in extension they come voluntarily. Leaders are teachers, or specialists and agents. Content is the information, concepts and values taught. Context refers to the learning environment—a classroom, a field, wherever education takes place. Each element is essential but *interaction* is the key word. Interaction is necessary for human development—no interaction, no education (House, 1990a, pp. 1-3).

The context for all extension education is informal. But, when the subject is a public policy issue, the context is also political and therefore controversial. Public policy education is merely education that is specialized to educate in a context that is political. It gives us a chance to deal with controversy without being controversial.

Science tries to replace myth with fact. Science develops knowledge by employing logic, reasoning, observation, and experimentation to test hypotheses and develop theories. Objectivity, essential to science, relies on the scientific method to provide a consistent logic.

Research-based information provides most of the content for extension education, but it is important to recognize that education is not an application of, or even an extension of, the scientific method. Science and education are two different functions relying on differ-

ent methods. Scientists often ignore this fact by presenting information about only one alternative.

The function of **politics** is to shape policy. At its best, it is communication to develop agreement. At its worst, it is a commendable alternative to war and insurrection. Politics has a bad image even though it is called the art of compromise. It includes negotiation and compromise among private parties but we usually associate politics with the shaping and implementation of public policy.

If there is one thing in this world that is predictable, it is that people who are doing politics will call it education. They are just trying to put a pretty mask on persuasion or propaganda. Extension educators are not immune to this behavior; in fact, much of it is intentional. When we preach instead of teach, we are engaging in politics.

What is the purpose of public policy education? Larry Libby expressed it accurately at this conference last year: "Our goal is to facilitate orderly change, minimize conflict, and generally inform people. It is not our goal to preserve farmland, preserve farmers, preserve wetlands, increase the supply of cheap housing or expand the tax base. We may vote on these issues at some point, but continued credibility as analysts and educators requires that we merely catalyze a decision process" (Libby, pp. 107-8).

Policy Roles Played by Academics

Do all academics want to be public policy educators? Obviously not. Those who choose to be involved with public policy serve society in very different ways.

Most academics who deal with policy are *policy analysts*: the information they supply helps justify the existence of both research and extension faculty. Many policy analysts are also *policy advisors*: they inform policymakers directly and privately as to the findings from policy analysis. Some are *policy activists*: representative government depends on the participation of active citizens, including educators. A few are also *policymakers*: they are in policy leadership roles because they can bring resources to bear on a common problem. Finally, there are public *policy educators*: they try to increase public understanding of public policies and problems.

What lessons can we learn from recognizing these roles? There are at least three:

1. Know your role's objectives (and limitations) and use appropriate methods skillfully. I have heard Clemson President Max Lennon encourage educators to insure their programs include academic content so they will continue to be essential. Likewise, policy analysts who provide lots of content often fail to

create the interaction necessary to learning. Policy advisors who think their role is temporary and safe often find themselves politicized. Likewise, policy activists will make political friends—and enemies. Policy educators have to be able to use research, be effective teachers and work in a political context.

2. Recognize the risks of role switching. You cannot expect someone you opposed on a political issue to believe you only have their best interests at heart when you try to be her teacher (Felts-Grabarski).

3. Recognize each role's contribution to our system of government, especially the role of policy educator.

Objectivity is Essential

Public policy education is a "constrained opportunity." The philosophy of the alternatives-consequences approach limits the educator by encouraging a rational, problem-solving approach; requiring equal recognition of alternatives and the people involved; and letting the people decide without the wisdom of your judgment. There is a presumption herein that your values are neither inferior nor superior to others' values. One can only conclude that objectivity is not a choice, that it is essential to success. Without objectivity, the only sources of credibility are our titles, our university's reputation, our director's image of us, our good looks, and our charisma. I have had to rely on objectivity.

Is objectivity possible? Of course it is possible, if you are willing to view it as a goal to reach for rather than an absolute condition. Academics love to debate the limits of science, that logical positivism is passe, and that research priorities are distorted by the dominant culture, funding sources and politics. I do not argue that science is perfect, just that science is useful *if* it is objectively done. Scientists rely on the scientific method. They gain credibility from it. They gain confidence in their findings when they know they have been objective in their pursuit of the truth.

Extension educators rely on the researchers to be objective so that our research-based information is credible. However, public policy educators also must have "objectivity in education." ***Just as researchers rely on the scientific method, public policy educators rely on the alternatives-consequences approach.*** We gain credibility from it. Citizens' confidence in us depends directly on their perception that we have been objective in education.

Objectivity in science is not the same as objectivity in public policy education. Objectivity is essential to both but one does not substitute for the other. Just as it is difficult to achieve objectivity in science it is difficult to achieve objectivity in education.

Conclusions

- The alternatives-consequences approach to public policy education lets us deal with controversy without being controversial.
- Be honest about your role. If you want to do politics, don't call it public policy education.
- You cannot be credible if you are not objective, both in research and education.
- Leadership development, issue programming, mediation, communications, rural economic development and public policy education compliment one another, but they do not replace the need for the alternatives-consequences approach.
- Objectivity in education empowers us to increase people's understanding of public problems and policies.

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THE CASE FOR ADVOCACY IN EXTENSION PUBLIC POLICY EDUCATION

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Verne House makes the case for the classic, formal public policy education model, the model that involves identifying options and describing their likely consequences. I have no problem with that model as far as it goes. Indeed, the use of the model may be vital as a discipline for practitioners of policy analysis. However, I believe that unless public policy educators go beyond the confines of that formal model they will fall short of their potential for engaging audiences and stimulating the sort of critical thinking that individual citizens must do to fulfill their citizenship responsibilities.

My line of argument runs as follows: An intellectually honest policy analyst who has carefully studied the issue is entitled to an informed opinion, and it strains credibility to deny that such a policy analyst does not have one. Without credibility, the public policy educator is doomed. Moreover, opinions are pedagogically useful because they engage the attention of an audience better than a dry, detached presentation.

This argument rests on three propositions:

The Informed Judgment Proposition

The first proposition I wish to advance is that policy analysts, by virtue of their study of an issue, are entitled to an opinion, or informed judgment. If an analyst is intellectually honest and has done his or her homework, that informed judgment is itself information for others who lack the time or skills to study issues in depth. To fail to share these opinions is to deprive citizens of inputs that can be useful in the performance of their civic responsibilities.

Such a proposition is almost heretical for many extension economists. But I did a master's degree in history. Like most graduate students, those in history are usually put through a course in methodology. My instructor in historiography was Bell Wiley, one of the legendary figures in the study of the American Civil War. Wiley taught that if historians did their job well, they knew more about the subject than anyone else and were in a unique position to reach informed opinions. As scholars they had an obligation to share those

opinions, not just with fellow scholars but with anyone interested in the subject, particularly if their investigations were supported out of public funds.

Like historians, professional public policy specialists immerse themselves in greater depth and detail in the materials related to public policy issues than most lay citizens can afford to do. That is what they are paid to do, often out of public funds. It is to be expected that analysts will emerge from the immersion with certain opinions about which of many possible opinions is likely to be best or at least which are the worst choices and why. Providing those opinions are based on an intellectually honest approach to the subject matter, citizens deserve the benefit of those informed opinions no less than the patients of a physician deserve his or her informed prognosis of their condition.

The Credibility Proposition

Even if one rejects the proposition that the public is entitled to know the informed opinions of those whom they pay to study public policy issues, it strains credibility for public policy educators to pretend that they do not have any opinions. An educator is worthless without credibility. Being up front and open about opinions is essential to maintaining the credibility that public policy educators must have to be effective.

The audiences which a public policy educator must try to reach are not made up of fools. Especially in America, they are made up of citizens who seem to be increasingly skeptical about the objectivity of so-called experts. It may be very difficult for citizens to accept that the public policy educator does not have his or her own agenda.

And why should they not be skeptical? Intuitively, lay citizens know that few among us have the ability to be perfectly objective. Indeed, from a philosophical perspective, perfect objectivity may be impossible, and from a practical standpoint, it is almost surely impossible. I will have more to say on this subject in the coda. But one simply cannot obtain the energy and resources needed to identify and evaluate all possible options. A whole range of options judged by some standard to be infeasible or culturally unacceptable must be discarded as "non-starters."

Since most ordinary people, at least most that I know, have a difficult time accepting the fact that a public policy analyst does not have a point of view, a pretense of objectivity undermines the credibility of the public policy educator and is counterproductive. It can cause audiences simply to turn the presentation off. It can cause members of the audience to be distracted away from the message of the educator as they attempt to figure out where the educator is coming from, what his or her hidden agenda may be. Better to be up front about one's own values, preferences and recommendations, with the

clear understanding that anyone who cares to challenge the position being advocated is welcome (even encouraged) to do so.

The Pedagogic Proposition

My final proposition is that having an explicit opinion and advocating a specific approach can be pedagogically useful, particularly in oral presentations. There is an old story, so familiar that it need not be repeated here, about the farmer regularly beginning each work day by hitting a mule in the head with a two-by-four to gets its attention. There is no way to do public policy education unless the educator gets the audience's attention. Advocacy is one way of hitting a potential audience in the head to get its attention.

The detached presentation of options and ramifications can be dry and boring. Advocating a point of view poses a challenge to the educator to convince and a challenge to the audience to dispute. That conflict between the presenter and the audience, properly managed, introduces passion and drama into a presentation; and in a society increasingly conditioned by television to demand drama, it allows the educator to introduce some spice into what otherwise is often so bland as to be ignored. The public policy educator who is ignored is socially useless.

Caveats, Qualifications, and Conclusions

Am I arguing that the policy educator's traditional model of options and ramifications be abandoned entirely? Certainly not. As I indicated above, use of the model as a way to discipline policy analysis is very important. For some audiences and in some types of presentations—particularly with written materials—it remains an appropriate way to do public policy education.

I would agree than an intellectually honest approach to public policy education requires that all the major options explicitly be noted and fairly considered. Indeed, in using an advocacy approach, there are great advantages to setting out the alternatives and then eliminating each one by one to show why the position being advocated is arguably the best choice among the available options.

I concede that some persons will be turned off by advocacy, particularly if it is in support of a point of view they find objectionable. But those persons often have their minds made up anyway and they are beyond the potential reach of public policy educators. I concede as well that some public policy educators, by virtue of their personalities and capabilities, are simply unsuited to practice an advocacy approach to public policy education. Regardless of how brilliant one may be as an analyst, if you are bland, boring and inarticulate, if you are uncomfortable with conflict or unsure of your own values, if you are arrogant, humorless or dogmatic, the advocacy approach is not for you.

Yet I believe that extension public policy education has suffered of late because timidity and political cowardice is provided respectable cover by the tenets of logical positivism that were embraced by economists a generation or so ago. I believe that by ducking our responsibility to advocate and defend what our analysis convinces us to be the best way to go, by avoiding criticism through blandness and the pretense of detached objectivity, we have failed those who we were supposed to serve. As George McDowell says: We have told audiences what they want to hear (or told them nothing much at all) rather than what they need to hear, and extension is headed for extinction as a result.

Advocacy in public policy education will not save extension, but it can begin to facilitate a re-engagement on the part of extension with ordinary people who expect those experts employed to be their servants to have the courage of their convictions, to be open and candid in their presentations, to defend their positions against vigorous attack and, most importantly, to be truthful, genuine and human in their treatment of those who depend upon them for information. Advocacy can put some sizzle back into our work, and perhaps—just perhaps—let us reach audiences that are not now being reached.

Coda: Cultural Values and Unexamined Presumptions

It is important to understand that the options and consequences model that House defends is not value neutral. It is, in fact, a legacy of Progressivist ideology which, in turn, is an offshoot of rational humanism. Rational humanism is based on the proposition that human beings using the rational powers of their minds can discover all truth, a proposition that in itself is vehemently rejected by many who come out of religious traditions wherein ultimate truth is obtainable only by divine revelation. The public choice models which are offered as an alternative to the Progressivist approach to public policy analysis also are derived from rational humanism approaches to the search for truth and share the same unexamined presumptions.

What many of us innocently take as nothing more than an analytical aid, the model of rational man motivated solely by self interest, is taken by some as a subtle sanctioning of a culture organized around hedonism and materialism. The central model of positivist economic analysis—methodological individualism—is a cultural affront to a significant segment of American society. In its nonjudgmental detachment, it is seen as certainly amoral and godless and sometimes dangerously immoral.

Philosophically, there is no neutral ground that a public policy analyst-educator might occupy to gain a value-free perspective on options and consequences. As a practical matter, lack of such neutral ground mattered little so long as there was some cultural ground common to all segments of the society, some fundamental set of cul-

tural values embraced through a social consensus. Throughout much of our history, most Americans, with the significant exceptions of the indigenous aboriginal peoples and African-Americans, shared a cultural outlook shaped by the Judeo-Christian civilization of western Europe. So long as such common ground existed, public policy analysis and education could be premised upon a consensus about fundamental values and achieve neutrality within a given cultural framework.

But it is debatable whether there is any cultural tradition common to all significant segments of contemporary American society. The growing populations of Asian Americans have brought with them cultural traditions and values drawn from Islam, Buddhism, Hinduism and other religious heritages once almost unknown in America. The growing Hispanic population, while influenced by the Christian values of Catholicism, has been shaped by a culture drawing heavily from Native American and African traditions. Similarly, African-Americans have cultural traditions that fuse Christianity and African outlooks. Rational humanism cannot bridge these differences because it requires that some of the most fundamental tenets of some of these religions be rejected.

If there is no common cultural ground, no consensus of cultural values, there is no public policy analysis that, when taken apart and examined with regard to its fundamental presumptions, will not be controversial, even offensive to some segments of the population. Lack of such a consensus on values has profound implications for policy analysis paid for by tax monies in a state in which there is a constitutional injunction to maintain a strict separation between church and state. Those implications are too complex and subtle to be examined properly here. But if all policy analysis must proceed either from an outlook derived from a philosophy of rational humanism, which at least denies a role for a supernatural divinity, or from an outlook derived from one of the religious traditions, and if that policy analysis is officially sanctioned by support from tax dollars, it must inevitably breach the wall of separation of church and state. Hence the constitutionality of the very act of public policy extension education is sooner or later likely to be questioned.

LIMITS OF PUBLIC POLICY EDUCATION

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This session had its origin last year in Omaha when Alan Hahn presented an overview of eleven public policy education projects funded by the Kellogg Foundation (Hahn, et al.). Hahn described the objectives and the approaches to policy education and reported that most had struggles dealing with the line between education and advocacy. These struggles were quite overt and recognized in those projects which had advocacy organizations as major coalition partners. In the projects with extension as the predominant player there was also tension, but it was less obvious and not well recognized. While those extension-led projects were in agreement that neutrality was the appropriate approach, there was disagreement in most projects about what constituted neutrality. The nonextension coalition members and other observers suggested that extension was not as unbiased as they claimed or thought themselves to be.

Hahn argued that the conflicts were not about education versus advocacy, but what range of alternatives or viewpoints was being presented and what was left out. It is clearly possible for a project to selectively present a set of alternatives that would lead most people to come to a particular position. Thus, Hahn says, the question is more about *balance* versus *bias*.

Another issue in public policy education is the selection of the target audience. Only one of the Kellogg projects openly acknowledged empowerment as a major objective. Three of the eleven placed any emphasis on targeting audiences whose interests and perspectives were poorly represented. In discussion following Hahn's presentation, there was some disagreement among the conference participants about whether empowerment is an appropriate objective of extension public policy education.

This is not a minor issue. If we select as the target audience one or more groups with a major stake in the policy outcome who also have a relatively narrow set of interests, it is likely that the range of alternatives and consequences deemed feasible by the audience will be more limited than it would be if a broader set of interests were included in the audience. Is this education or advocacy? Is it balanced or biased?

If you agree with House that education is human development, then what is our educational responsibility to seek out and involve audiences who otherwise have little or no access to the policy process to register their interests and preferences? Depending on your answer, is this education or advocacy? Is it balanced or biased?

To summarize Hahn's observations, he said: "Our research has led us to wonder if *balance or fairness* is not a more useful standard than nonadvocacy. Regardless of whether public affairs educators advocate or adhere to the neutrality model, should the foremost consideration be a serious effort

1. to identify as full a range of perspectives on the relevant issues as possible,
2. to remain open to new definitions of balance as additional perspectives come to light, and
3. to ensure that each perspective is given fair treatment?

Should neutrality be rejected as unfair if it covers only a partial range of perspectives? Is advocacy irresponsible if it fails to acknowledge and make sure that learners understand the advocated position's weaknesses, uncertainties, and opposing viewpoints? Is special assistance to people with poorly represented interests and perspectives defensible on grounds of balance, with the correction of serious power imbalances understood as a prerequisite for fairness and the mutual understanding of all points of view on an issue?" (Hahn, p. 31).

Also at last year's conference, I made a presentation that suggested the need to go beyond the alternatives-consequences approach on some issues. I argued that presenting the information was a necessary, but not sufficient, condition. The educational role in public policy education should strive to reach understanding among all relevant interest groups about the interests and preferences of each other and the reasons why.

I also said that conflict resolution and interest-based negotiation on some issues may require the educator to remain an integral part of the process all the way through to decisions.

Otto Doering, in an unpublished paper earlier this year, asks if there is still a constructive role for public policy education (Doering). He argues persuasively that there is less interest in, and impact from, traditional public policy education programs than there was even a decade ago. He attributes this to the fact that more centralized decision making and government professionals have taken over much of the policy process leaving mostly lobbying and demanding services as remaining citizen roles.

Otto does call, however, for increased policy education on certain issues on which the local citizen still has discretion, either because

the issue is new or a full-fledged client/service relationship from government has not yet become fully developed.

He also goes further to say we should be advocates for citizen involvement in civic affairs. That means programs in which the primary goal is to encourage people to become actively involved in politics and public policy. Michael Briand this morning agreed when he said, "Education should teach politics as well as policy." The Family Community Leadership (FCL) program has this as a major goal, but very few long-time extension public policy education people have been involved. FCL has, instead, drawn on a new cadre from home economics and community development specialists and county agents.

This morning we have heard three excellent presentations. The defending, i.e., traditional, position on the neutral alternatives consequences approach was given by House. He cited six milestones, one of which is still to evolve in this decade.

The challenging position by Hite argues that the nominally objective public policy education model is a useful disciplinary device, but it straightjackets policy educators and provides respectable cover for timidity and political cowardice.

Where do you stand? The discussion is now up to you.

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AN EXTENSION LAY LEADER'S REACTION TO THE MORNING PROGRAM

Mary Grezaffi
National Extension Committee

"You may be on the right track," as Will Rogers pointed out, "but if you stand still long enough, you can still get run over by a freight train." You are certainly on the right track when it comes to focusing on public policy issues. But the need for momentum is paramount.

I would like to share with you my perspective as a Southern lay leader on the National Extension Committee (NEC) and conclude with my perspective as a working farmer.

The NEC is one of four functional committees established by the Joint Council on Food and Agricultural Sciences. We contribute to planning and coordination between extension and others involved with educational programs addressing the priorities established by the Joint Council. The committee provides a national extension perspective on the formulation of policies and reports prepared by the Council.

In 1991 we focused on issues relating to natural resources. In February of that year we issued a resolution regarding the need for momentum in this process of public policy education. The NEC's premise is that, in order to address public policy issues effectively through education, the system must be able to respond, not only to situations as they arise predictably, but to those that arise unexpectedly. In addition, the system must anticipate through futuristic planning.

Advocacy Versus Objectivity

I have listened with great interest to the debate regarding the most effective method of delivering public policy education. It is truly a challenge to offer an unbiased approach when considering our values and perspectives. One program with which I am familiar is, however, addressing this challenge.

Agromedicine: The South Carolina Experience, was established in 1984 in response to recognized needs for public service, education and research in agriculture and medicine. The program combines the resources of the land grant and medical campuses in promoting agriculture and consumer health and safety. In terms of financial

support, the founders stress maintaining objectivity to avoid the appearance of being a spokesperson for any particular group or industry.

Relying upon facts and presenting them objectively can reduce the harmful effects of sensationalism. Sensationalism, such as that surrounding the Alar incident, can and will dictate policy if those with the knowledge base and position to address these issues do not come forth expeditiously and effectively.

Coalition Building

Coalition-building is essential to the long-term viability of production agriculture. An outstanding example has been set by Louisiana Cooperative Extension Service Environmentalist Education Specialist Bill Branch. He has brought together such groups as the Environmental Protection Agency, the Louisiana Department of Environmental Quality (DEQ), the Louisiana Wildlife and Fisheries, the Farm Bureau, the U.S. Department of Agriculture, the U.S. Army Corps of Engineers and the Extension Service, the Sierra Club and the National Audubon Society, along with representatives from research and higher education and private citizens.

The culmination of his coalition-building efforts resulted in the 1991 passage of an act by the Louisiana legislature calling for a review by the Louisiana State University Agriculture Center and the Louisiana Department of Agriculture and Forestry of any actions by the Louisiana Department of Environmental Quality affecting farming. The act also called for the governor to appoint a liaison between DEQ and the agriculture industry.

Before DEQ implements any rule or regulation affecting agriculture, the liaison reviews the proposed action with the Agriculture Center and the Department of Agriculture and Forestry to determine the economic impact upon agriculture and the possibility of an alternative method that could achieve the environmental goal of DEQ.

The Louisiana approach is an attempt to avoid undue regulation and/or reduce the economic impact of regulation upon the agriculture industry while addressing public policy issues.

Both the South Carolina program and the Louisiana program rely on coalition building, a broad scientific base and facilitation of information for their effectiveness.

Leadership Development

Another area critical to public policy education is leadership development. There continues to be a great need for leadership development programs in agriculture and on the community level. Many

states are addressing these needs and I applaud you and encourage you to continue with this endeavor. I graduated from the first Louisiana State University Agricultural Leadership Development class. The program has my full support.

Public Policy Education

Public policy education is also essential to the long-term viability of production agriculture. Our people in the field—county agents, home economists, agriculture specialists—need more support to become better prepared to address public policy issues. As Alan Hahn points out, public policy education is a critical element in addressing issues. Focusing on issues is necessary for effective public policy education. Ideally, Hahn stresses, "The concerns that educators focus on should be determined by the people themselves." He further suggests an often under-used tool for identifying these issues—*listening* (p. 3).

As a farmer dependent upon agriculture to support my family, I do not believe farmer's voices are being heard. In the August/September, 1992, issue of the *Farm Journal*, staff economist John Marten cautions, "We're a shrinking issue at the national level; farm numbers and influence are both slipping (p. 5)."

"A shrinking issue." This is not hard to believe when, according to that same August/September issue of the *Farm Journal*, agriculture was included as an afterthought at the Democratic National Convention (Hillgren and Klintberg). Even the Republican platform says that a vibrant farm and ranch economy is critical to the economic vitality of rural America. I say a vibrant farm and ranch economy is critical to the economic vitality of *all* America—including our national security!

Alan Hahn indicates there are two questions to ask when identifying public policy dimensions of any topic: 1) Do the policies of organizations or government create some of the problems, obstacles, or barriers that people face? 2) Are changes in the policies of organizations or government among the alternatives for solving problems, removing obstacles or otherwise improving the conditions people experience?

When considering our current situation in agriculture, I answer a resounding, "Yes!"

"If the answer to either question is yes," Hahn says, "then the potential exists for developing and implementing a public policy education program" (p. 4).

I hope the identifiers are listening.

Here are some of the public policy issues associated with production agriculture that need to be addressed:

- Agriculture's national image. We are a vital, essential industry, not an entitlement program. "Agriculture is facing a public relations crisis that is of monumental proportions," says Gary Enright, president of the Insight Development Institute. "Communication problems arise not because farmers are harming the environment or the animals they raise," Enright says, "but because people do not understand agriculture."

- Our presumed cheap food policy. Is its primary goal to promote exports or to keep food prices economical? In the September issue of *Farm Futures*, the publication's second presidential poll reveals "42% of the readers surveyed believe President Bush wants to keep prices low" (Knorr).

- The inequities associated with the 1985 and 1990 farm bills, along with a failure to increase exports and reduce supplies through market-clearing prices. These farm bills have resulted in the inability of many farmers, predominantly Southern farmers, to participate on a level playing field. We cannot prove our yields and are, therefore, denied equal access to program protection. In my area, I am witnessing a shift toward program crops—rice, sugar cane, cotton—as land is bid away from unsubsidized crops, leading to less diversity and more regionalized cropping patterns. Monoculture on land is returning. Where is production agriculture following these two farm bills? We are farming for 1970 prices at 1990 costs. No wonder the Congressional Budget Office predicted in excess of 500,000 more farmers will be forced to exit agriculture by 1995 (Congress of the United States, p. xvii). We simply cannot grow products and sell them for below our cost of production and stay in business—and some call this the "march of progress."

  Recently a rural summit to discuss the problems facing production agriculture and rural America was requested by lawmakers and rural leaders. The movement was spearheaded by Farm Credit lenders who recognize the vulnerability within the agricultural sector. This request was met with White House rejection. Why? Because sometimes it is not, "*Are* you listening, but *who* are you listening to." Top domestic policy advisor Clayton Yeutter contends that rural America, in the aggregate, "is in very solid shape economically . . . is very healthy indeed" (*Plains Reporter*, p. 1). Are you listening, Mr. President? You are invited to Pointe Coupee Parish to witness first hand the steadily declining state of a once vibrant rural community.

- Another issue of concern is the definition of agricultural-dependent counties as a reflection of net income. This definitely ignores the full impact of agriculture on rural communities. If we were to follow the IRS calculation of net farm income, farm dependent counties would join young farmers as an endangered species (Mills).

- The traditional farm family, long proclaimed the symbol of the true American family—encompassing our traditional ideals and values—is being torn apart by today's economic problems.
- Free trade negotiations—what does the future hold?
- Centralization of agriculture and related industries. Does this lead to contract agriculture? Are we headed in the same direction as the livestock industry. Does the end justify the means?
- The controversy over ethanol. Scientific evidence is growing indicating ethanol may ease one air pollution problem while adding another (Shaw, p. 34).
- The changing role of the Extension Service. Is it becoming history as was addressed in the September issue of *Progressive Farmer* (p. 3). Some say, if present trends continue, it is highly doubtful the Extension Service will survive. As farm numbers continue to decline, and we wind up with only a handful of farmers each operating 15,000 to 20,000 acres in every county, will they need an Extension Service?

These are all public policy issues as they relate to the overall farm economy and there are many more. We must address these issues with more focus and listen more attentively.

As we progress with public policy education in our country, let effective results, not just activity, be our goal. And, above all, let's keep moving!

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Agriculture and Environmental Policymaking: Issues, Actors, Strategies

AGRICULTURE AND THE ENVIRONMENT IN THE 1990s: CHANGING SETTING AND CHARACTERISTICS

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The nexus between agriculture and the environment in the national policymaking arena has changed a great deal during the past decade. It is likely to change considerably more in the 1990s. Reasons behind the changes are relatively easy to identify. However, the shape that these changes might take are much harder to forecast. Even among the "experts," there are many competing views about both the general configuration and about the specifics.

This discussion is centered on considerations and possible actions by Congress as it is buffeted by pressures to address the numerous and complex issues that connect agriculture with the environment. The complexity is caused both by the substance of these issues and by the way that they are resolved in the public policy process. This process no longer is limited to the farm bill, annual appropriations and other agricultural legislation. It now includes a much broader array of participants and legislative vehicles. Before getting to the specifics, two stories about the future may help set the perspective.

Predicting the Future

Predicting the future requires brashness and a willingness to accept being wrong. For example, in a June 22, 1991, issue of *Congressional Quarterly*, Ron Elving published a column titled "Predicting Elections; Catalog of Folly." Remember, this was after the Gulf War, at the height of President Bush's popularity, and a mere eighteen months before the upcoming election. After quoting Henry Shaw's saying that "we go wrong not because of what we don't know, but because of what we know for sure that ain't so," he reviews presidential elections since 1940. He finds that the conventional wisdom eighteen months before the election to be more often than not at odds with the results. He also reviews the Bush record and the public perception of the Bush presidency at that time.

The views expressed in this presentation are those of the author alone and do not reflect any views or opinions of the Congressional Research Service.

Elving concludes, "Does this call for a full-ranch bet against the GOP in 1992? Hardly. Being incumbent and popular remains preferable to being anything else. But you still have to pave the road before you cut the ribbon. Don't let anyone tell you different." I am not about to predict the election, but the dynamic under which it is operating has changed a great deal in little more than a year.

A second story is an example of how history can repeat itself. Earlier this year, a group of my colleagues and I convened a two-day seminar on multiple-use and sustained-yield concepts. We invited national experts to discuss whether these concepts remain valid guides for anticipated U.S. Forest Service and Bureau of Land Management activities and, if they were not, what concepts might replace them. Two summarizers were asked to pull together the presentations and comments at the end of the seminar. One of the summarizers was Frank Gregg, formerly director of the Bureau of Land Management. Frank spent the better part of ten minutes making insightful comments and concluded by saying he had just given a verbatim summary of a water resources meeting a year earlier at which he had the same role. He concluded by noting that public lands issues seemed to mirror national water policy issues, the major difference being that one is a little behind the other in time.

What the second anecdote suggests is that we can learn about the future by looking for analogous sequences of events and concerns. But in making comments about the future, one must also be very careful to avoid creating a catalogue of folly. My comments will be useful if you can graft some of these thoughts on to your own experiences and needs, and if they will help you to see the future a little more clearly while avoiding a catalog of folly.

When we talk about the future, one usually assumes that past broad trends will continue. Some trends that affect agriculture might include changes to the structure of agriculture such as the relative decline of the mid-sized farm, changing consumer preferences such as the continued decline in per capita beef consumption and increase in per capita poultry consumption, and broader changes that impact on agriculture such as the continued depopulation of large portions of rural America. If the decade of the 1990s is a relatively quiet one, with few deviations from past trends, then many of the predictions are more likely. But as we move further into the decade, or as more unpredicted events occur (major natural disasters here or abroad, events of the magnitude of the fall of communism during the last decade, basic changes in personal preferences, etc.), the likelihood of being off the mark will grow.

Listing Topics

A laundry list of the issues one thinks of today would seem to serve little useful purpose. Trying to identify and discuss all these

issues—from the global, such as the North American Free Trade Agreement, the General Agreement on Tariffs and Trade negotiations and climate change, to the specific, such as the Conservation Reserve Program (CRP) after 1995 and integrated farm planning—would probably confuse. Such a list would not only be extremely long, it is likely to hide rather than highlight key policy considerations. However, two topics that are not addressed later, wetlands and endangered species, need some mention because they both are likely to remain major national policy issues during the next few years.

Wetlands

Resolution of the current vociferous wetlands debate is largely a political decision, with sound science appearing to have a decreasing influence. The Bush administration has identified wetlands as one of its significant environmental initiatives. Decisions on criteria in the delineation manual used to define wetlands appear to be made based on political considerations alone. Whether they are good science seems largely irrelevant. But the manual seems to defy good science. That is, wetland scientists cannot agree on an interpretation of the three criteria identified in the Swampbuster definition that can encompass the physical diversity of wetlands, and the differing opinions on which wetlands really do provide the values for which they are supposed to be protected.

A lack of timely data has contributed to the contentiousness of the wetlands debate. The U.S. Fish and Wildlife Service, the primary keeper of federal data on wetlands trends, released a report late in 1991 on wetlands loss trends between the mid 1970s and mid 1980s. But between 1991 and the mid 1980s, changes in federal policies, as well as more general changes in the economy probably have affected the rate and pattern of loss. Imagine trying to analyze current agricultural policy options if the most recent land use data had been collected in the mid 1980s. This comment is not meant as a criticism of the U.S. Fish and Wildlife Service, because collecting wetland data is a complicated and time-consuming process. But with such a long time lag since the data were collected, it is very hard to assess options and determine the most appropriate adjustments to current policies. A lack of current data certainly inhibits policymakers from knowing how close they are to a no net loss situation, which types of wetlands are under the greatest threat, and which federal policy changes might most effectively respond to those threats.

Endangered Species

Reauthorization of the Endangered Species Act may be among the most significant debates in the next several years in which agricultural and environmental interests will interact. The Endangered

Species Act is seen by environmentalists as one of the strongest laws because the designation process only allows for biological considerations. Many agricultural (and other) interests see this flexibility as unacceptable. The debate over whether the law should allow decision makers more discretion in weighing factors other than the purely scientific information about the specie in question will be a major debate.

Protection of ecosystems rather than species is receiving more attention and will grow into a very important new center of discussion. If protection of ecosystems becomes a more important part of the legislative mandate, implementation could affect much larger areas in the future. As in the wetlands debate, the important and necessary data on various species and their relationships to their ecosystems will often be unavailable. The result may be more debates that take on many of the characteristics of the current spotted owl debate in the Northwest.

The Future—Defining Characteristics

Certain characteristics help define the limits and direction of future policy debates and decisions. Five characteristics that are important in defining the national policy debate on agriculture's relationships with the environment are changes in the 103rd Congress, the federal budget deficit, the expansion of designated special places, changes in the key players in the national debate, and possible changes within the U.S. Department of Agriculture (USDA). By the next farm bill debate in 1995, and increasingly as we approach the end of the decade, these defining characteristics could be replaced by others.

Changes in 103rd Congress

Congress will change markedly next year. Predictions are that at least 125 members, and perhaps as many as 150 new members will be elected to the 103rd Congress. These new members will have to hire staff. Those with no legislative experience will be working hard to learn the mechanics of functioning as members while their constituents pressure them to provide the services they promised. Significant reorganization proposals are being discussed. These will have a good chance of being implemented, both because there will be so many new members who do not have a vested interest in the existing structure and because many will be arriving with a mandate for change.

These changes are likely to affect aspects of the agriculture-environment debate, although specifics are unclear at this point. If Clinton-Gore win, the Democrats will press to move on several defining initiatives. But there is no indication any of these will be in areas that directly affect environmental aspects of agriculture, beyond

Senator Gore's well-documented interest in environmental topics generally. If Bush-Quayle win, then there is likely to be much less external pressure for rapid or significant change from current policies.

Redistricting has eroded agriculture's power in the House another notch and demographers see no reason these trends will not continue throughout the 1990s. As the population both grays and migrates to the coasts and the sunbelt, rural America will continue to lose its political clout. For the first time, in the 103rd Congress a majority of the members will represent the suburbs and exurbs and a minority will represent the central cities and rural areas.

Outside forces, including environmental and consumer interests, will have greater influence in setting basic agricultural policy. That influence is most apparent when the farm bill is being voted on in the House of Representatives. Many members who have no agricultural constituency view the farm bill as a relatively unencumbered vote to satisfy another constituency. Environmentalists and consumer interests have learned to more effectively involve themselves in the farm bill process, and to make members aware of positions they endorse. With redistricting, winning this House vote could require even more compromising by farm interests.

Implications over the next several years include:

1. Fewer members will be interested in agriculture as a priority.
2. Agriculture's voting block will continue to lose power.
3. Fewer members will seek appointment to the agriculture committees.
4. Agriculture will increasingly compete with other regional, rather than national, issues and constituencies, more akin to many of the Western public resource topics than to national topics such as defense and education.

The Senate Agriculture Committee is already becoming more of a regional, rather then national, committee, and it is likely to be increasingly dominated by members from the Plains, the Corn Belt and the Southeast. Only three of the eighteen members are not from those areas (Leahy, Craig and Seymour). Further, the committee is chaired by a member who represents a very small number of producers and whose state produces only one major commodity commercially. As a result, he has a specialized interest in agriculture that is different from the major producing regions. These characteristics can skew policy directions in many ways, some are probably desirable and others unfortunate.

Federal Budget Deficit

The continuing deficit will mean less money, foreclosing a growing number of possible policy options for fiscal reasons alone. Budget

constraints will generally demand more effective programs that have lower federal costs but higher levels of participation by the "right " people or land where the problem is most severe.

One possible response could be targeting. In the early 1980s, the Reagan administration pushed the targeting concept, but Congress placed strict limits on its application through the appropriations process. Policymakers will wrangle again over whether constituents should be penalized with less service because they have either fewer problems or have been more successful at solving problems. If financial and staff resources available for agriculture's conservation effort remain relatively constant over the next decade, defenders of the programmatic status quo may prevail, but if these resources are reduced or if there is a public perception that programs are not adequately addressing problems, then acceptance of targeting by Congress seems more likely.

Two examples may foreshadow the way that Congress will view conservation programs in the future when confronted by budgetary constraints. First, Congress chose not to fund any additional CRP signups in FY 1993 as called for in the administration budget request. In rejecting this request, the Appropriations Committee stated in its report to the House that "Difficult fiscal constraints have forced the Committee to provide resources for those conservation programs that have proven beneficial over the years." It seems very likely that Congress will apply the same logic and not provide new funding for FY 1994.

The administration also requested full funding for the wetlands reserve program. Neither appropriations committee provided any funds. On the floor of the Senate, limited funding was approved. However, in the conference committee action that concluded the agricultural appropriations process, this funding was deleted. In recommending no funding, the House Appropriations Committee had concluded, "In these stringent fiscal times, the Committee does not believe it prudent to embark on a program, notwithstanding its potential, without a clear understanding of its costs versus its benefits."

Special Places

The countryside is increasingly occupied by designated sites that may constrain farmer activity in the future. Examples of the designations include wetlands, wellhead protection areas, archeological sites, endangered species habitat, historic sites and the coastal zone. Further designations under these categories and the appearance of new categories can be anticipated. Each designation limits uses of the land that are incompatible with specified values. Some aspects of agricultural production may be identified as incompatible uses. The overall acreage remaining outside these designations will decrease. In some urbanized areas, especially in coastal locations, agriculture

could be largely pushed out by these designations in concert with economic and other forces. Eventually, these designations will place pressures on the undesignated resource base, first locally, then regionally in areas such as the coastal zone, and, perhaps eventually, nationally.

Some landowners who are affected by these designations are challenging them. They are coalescing into private property rights advocate groups. Defense of private property rights had been a rather quiet legal backwater until recent years, when a series of lower and Supreme Court decisions encouraged these advocates to assert that certain governmental actions that reduce property values should require compensation. These court decisions have given these advocates hope that the current balance between a land owner's right to use his land as he wishes and the government's right to protect societal values without compensation, except in very limited circumstances, is changing. While these decisions have been touted by protection advocates as heading toward a real change in governmental ability to limit uses, most judicial scholars believe any changes that result will be less significant.

Key Players

Key players in national agriculture and environment policy issues can be divided into three general groups; a conservation coalition, a commodity coalition, and congressional staff. These groupings bypass many specific differences, some of which are pronounced. Players in each group have been active in agricultural politics through the agriculture committees since 1985, and will continue to be for the rest of this decade. Excluded from this discussion are many outsiders in the environmental and Congressional communities who influence policies toward agriculture through initiatives outside the agriculture committees and the farm bill process that nonetheless affect the business of agriculture.

The conservation coalition has evolved since 1985 when it first appeared as a forceful and tight-knit group of representatives from five to ten environmental organizations. It centered on about five key leaders; they were surrounded by a number of organizations and individuals who shared the coalition's goals and interests. By the 1990 farm bill the coalition had fragmented. For example, wildlife interest worked separately to develop and promote their proposals. But the remaining coalition seemed more fragmented as well. As a result, what it submitted was a wide-ranging array of proposals in 1990, and the diverse features of the conservation title may be attributed, in part, to this diversity of proposals.

The conservation coalition is likely to continue to fracture, but the central members, who understand farm bill politics the best, are likely to be most effective within the agriculture committees in the

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future. However, recent actions by some of the key leaders also suggest they will not be reluctant to take environmental concerns to other committees that have been far more receptive to the environmental perspective than the agriculture committees in the past.

In 1985 there was no commodity coalition to respond to conservation proposals. Reasons may include that they thought these proposals would not go anywhere, that they would be watered down through the legislative process, that they were unstoppable, or that there were more important farm bill issues (commodity title provisions for example) that needed their full attention. Being wrong in 1985, they were organized by 1990. As in the case of the conservation coalition, a few groups and leaders became central. While commodity groups were very visible, the major farm groups stayed on the sidelines, at least in public. The goal of the coalition was to blunt conservation initiatives they believed to be onerous, both by softening the 1985 enactment and by limiting aspects of the new proposals in 1990. They were looking for win-win situations, which seemed to characterize 1990 amendments to Swampbuster, for example.

In 1985, Congressional members and staff sought to accommodate environmental proposals as the two agriculture committees bid against each other to enact a stronger set of proposals. But with the emergence of the commodity coalition, members and staff were buffeted by competing views and pressures in the 1990 debate. Senator Fowler's staff attempted to accommodate them in 1988 and 1989 by providing a forum in which each could express views with Fowler's staff facilitating a process that would lead to compromise and agreement. This did not work, however, as neither side was apparently ready, or perhaps able, to fully articulate its position.

Heavy committee staff turnover in both agriculture committees meant that most who had worked on the 1985 conservation title had been replaced and the new staff had a great deal to learn about both the politics and the substance of the topic. Congress, sensing strong support for most pro-environment proposals, took the approach that more was better than less, and most of the topics and ideas proposed found their way into the bill. Also, Congress tried to keep control over implementation by inserting numerous deadlines and reporting requirements. Since 1990, however, Congress has generally chosen not to pursue this control through the oversight process; to date there have been two oversight hearings, both held by the House Agriculture Committee's Subcommittee on Conservation in May of 1991. One addressed the status of compliance and the other addressed water quality activities throughout the USDA.

In future debates, answers to several key questions will indicate how these three groupings have decided to participate.

1. Will environmentalists increasingly seek legislative changes outside the agriculture committees?

2. Will environmentalists seek to consolidate the initiatives already in place, centering their collective attention on topics like the CRP after 1995 and more consistent implementation of compliance, or will they look to further expand the array of conservation initiatives to perhaps whole farm planning, more aggressive water quality protection efforts, or a new initiative that would supplement compliance?
3. Will major farm groups become visible players on behalf of farmers and, if they do, how will they relate to commodity groups who were already at the table in 1990?
4. Will commodity groups continue to be relatively passive, looking for win-win situations, or will they more actively seek to develop and enact an alternative agenda that differs from environmental group proposals?
5. Will the same Congressional staff that developed the 1990 farm bill provisions be back for the 1995 farm bill debate?
6. Will Congressional interest take a more aggressive and perhaps adversarial posture with USDA, measuring initiatives and accomplishments against the diverse and complicated agenda that was enacted in 1990?

Changes at USDA

The recent proposals to reorganize the USDA are outside the scope of this discussion. But the types of reorganization that are being discussed could affect the interrelated services that the USDA offers for addressing environmental problems—financial incentives, technical assistance, education, research and other supports. These have evolved over the past several decades as new programs have been added and the overall array expanded. This collage of services was probably a better fit with the needs of the country's producers when there were millions of farms, mostly of similar size and with similar needs. As the sector has evolved toward a bimodal structure with many very small producing units, more very large units and a rapidly shrinking number of middle sized units, this packaging of services seems less efficiently fitted.

Adoption of reorganization proposals would alter the political tension over whether the USDA and its agencies should focus more attention on the large farms and commercial agriculture, a direction in which recent and current leadership have headed, or give more support to small farmers and to the broader needs of rural America, as was most recently attempted in the late 1970s. For policymakers, this is largely a question of equity. Those who support more assistance to rural America probably assume most larger farms are in much better economic shape by almost any measure, and need less public assistance, while those who support the current approach would argue

it yields the best assurance of plentiful and affordable supplies of food and fiber.

The reorganization discussion is propelled, in part, by budget constraints. It is hard to imagine the USDA overall will have as many employees or as large a share of the overall federal budget by the turn of the century. If it does, agencies that deal with farmer-specific programs will probably lose staff and funds to the agencies that implement programs that respond to a broader cross-section of interests and a larger constituency. This change will be one of the outgrowths of the ongoing debate over whether agriculture retains a special place in the American mind (and in national policy), or is just another business that is not entitled to special exemptions from federal regulations and other limits that are applied to most businesses. While the trend to treat agriculture like any other business will continue, the debate will probably not be concluded by the end of the century.

Congress seems to mistrust the ability of the USDA to deliver the conservation package as most recently defined in the 1990 legislation. Congress is micromanaging it with numerous deadlines, precise implementing instructions, and a blizzard of reporting requirements. Micromanagement is also a reaction to strong external pressure, primarily from some environmentalists who believe that the USDA is reticent to act and needs to be prodded. However, micromanagement also has a number of very real costs, in terms of human and financial resources.

Micromanagement is likely to continue. It will be most apparent in areas in which Congress concludes that the USDA or its agencies are unwilling to carry out authorized policies, moving too slowly to implement them, or misinterpreting the Congressional mandate. Part of Congress's inclination to micromanage will show up in more precise directions in controversial areas; a comparison of legislative language regarding Swampbuster in the 1985 and 1990 as well as a review of oversight hearings on that topic during those years are both good examples.

Causes of this distrust need to be understood. One explanation is that there is a time lag after changes in policy before they can be translated into actions and into the culture of the implementing agencies at the local level. When there have been changes of the magnitude that occurred in 1985, reinforced by additional ones in 1990, the implementing agencies, especially at national headquarters, believe they are moving rapidly, while critics believe they are moving too slowly. In the case of compliance, for example, while producers call for flexibility and common sense, some conservationists counter that the law was enacted a decade ago and little flexibility is appropriate at this time, except under unusual circumstances. They fear that flexibility may really be a code word for minimization or avoidance. The recent study by the Center for Rural

Economics, which documents a far higher portion of farmers out of compliance than Soil Conservation Service's statistics, is one of the initial gambits in what is likely to be a battle of claims and counterclaims.

Peering into a Cloudy Crystal Ball

What's going to happen? There are several fairly specific trends that can be anticipated for the future.

First, the time for programs like the CRP, and, to a lesser extent, the Wetlands Reserve, may be passing fast. Future federal budget constraints will mean that mechanisms that allow the landowner to buy his way out, especially for a temporary solution such as CRP, will not sell in the political marketplace. These programs will be far more acceptable if program costs can be shown to be affected by savings in other areas, such as commodity program costs. These offsetting savings will be more difficult to demonstrate if these other programs are cut back.

Second, compliance will be a growing concern for environmentalists if efforts to reduce the federal farm program expenditures are succeeding. They will worry that if fewer farmers choose to participate in these programs, then compliance will be less effective. They will be looking for opportunities to supplement compliance to encompass more rather than less of the country's resources. So far, new ideas are in short supply.

Third, in water quality, but other areas as well, demonstration projects at selected sites will not cut it any more at the national policy level. What critics of current conservation efforts are demanding is national programs that work to solve these problems wherever they occur, not just in selected areas, and where available resources can be concentrated for an unusually intensive effort. As water quality, and resource conservation issues more generally, are increasingly addressed by state and local jurisdictions, and as the use of regulatory approaches grows, the pressure for a coherent rather than piecemeal program will increase.

Fourth, a key question will be what to do with CRP acres as the contracts expire. Congress may still be discussing options almost until the first of the contracts expire. The range of options will continue to be limited by budget considerations and also by a view that compliance already provides a protective floor, at least to keep the highly erosive lands out of production. Possible outcomes to this debate include the end to the program after the contracts expire, a smaller CRP with more stringent eligibility requirements that would admit only the most erosive of lands, and a CRP of up to the same size, but with smaller payments for all those who choose to continue participating. The approach that is selected will be based on an evaluation of the costs and benefits of the current program, as well as perceptions of future needs.

These fairly specific trends and decisions will fall out from other forces that will influence the debate. One has to do with recognizing that the speed of policy changes can be too swift. Policymakers may not stop changing policies and programs long enough to determine whether new initiatives are working well. If policy direction continues to change rapidly, with multiple and diverse new opportunities, then it may be very difficult for the implementing agencies to get the new programs running and to assess how they work. Such information is critical to the rational evolution of public policy. The pace since 1985, should it continue, has the potential to undo many of conservation's positive gains.

Also there will be much more environmental legislation during the rest of this decade that treats agriculture like another business, but agriculture will still be protected in many areas. Agricultural interests will continue to cry "foul" while other interests will continue to be frustrated by this partial protection. The big issue that will encompass this debate will be the environmentalists' search for a new approach to supplement compliance that will more fully capture all producers whose activities result in unacceptable environmental degradation.

One good way to pull all these thoughts about policy trends together is by thinking in terms of time at both the producer and the policy levels. For producers, time is increasingly the enemy. Successful farming is demanding more management that takes time, so any assistance that reduces time demands can be highly valued. USDA may be pressured by Congress to help deal with time constraints on producers in two ways. One is to provide a package of services to help them understand and incorporate more sophisticated management technologies. This could help give progressive producers some additional competitive advantage. The other is to help them overcome the minutia of regulation and other government interventions. This would help them know when they need to do things to take advantage of the carrot programs and to avoid the penalties of the stick programs.

In terms of national policy, time is crucial—if you cannot clearly articulate accomplishments, those who would propose alternative approaches have superior policy leverage, not necessarily because what they are selling is inherently better, but because you had your chance, and you cannot measure that it successfully did the job. With all the changes in policy and new directions of agencies in the USDA, this will be both one of the most pressing questions to address and most difficult to answer. This will remain one of the key questions that policymakers will explore during the rest of this decade. Given current conditions, the present policy arena, and other considerations, there are reasons to be both optimistic and pessimistic about where we will be at the turn of the century.

RIGHT VERSUS RIGHT—FINDING COMMON GROUND

John Campbell
Ag Processing, Inc.

Production agriculture is correctly portrayed as being in conflict with the natural environment.

Production agriculture is also undeniably responsible for the planet's capacity to sustain five billion people at relatively high nutritional levels.

The result of this dichotomy is that both environmental and agricultural advocates claim the moral high ground in public policy debates.

At the extreme, both camps also claim the other is an advocate of mass starvation. Farmers, because they are supposedly plundering the earth's sustaining resources, and environmentalists, because they appear to advocate eliminating practical means of food production.

Finding common ground is what democratic public policy formulation is all about.

Common ground does not mean that all sides are satisfied equally. Development of North America by our European ancestors was made possible by a pro-development public policy. Pro-development public policy included scores of incentives to expand agricultural production Westward. Key to this development was the acquisition of land such as the Louisiana Purchase, military containment of native peoples, investment in infrastructure such as railroads, easy resource access for agricultural entrepreneurs through the Homesteading Acts and establishment of technological institutions for agriculture such as the U.S. Department of Agriculture and the State Land Grant Universities.

My own family ancestors took advantage of the 19th century American public policy known as "Manifest Destiny." Daniel Freeman, was the first homesteader in America. He staked out his Nebraska Territory claim near what is now a little town called York.

Times have changed in York, Nebraska, and all over the agricultural heartland of America. Daniel Freeman would roll over in his grave if he were to learn that "Manifest Destiny" has given way to "Manifest Regulation."

The tug and pull of the policy debate is much more even today. Surprisingly, the environmental side of public policy has only taken thirty years to gain equal, or better than equal, strength with more than 300 years of pro-development policy.

The challenge of harmonizing agricultural production with environmental protection is evident at all levels of government from the township to Washington, D.C.

At the outset, we must recognize that neither extreme will prevail. Farmers and ranchers will not be allowed to wantonly waste or pollute natural resources. Property restrictions and indirect regulation of farmers, through direct regulation of the agricultural input and output industries, are already a fact of life and will not be reversed.

Similarly, American society will not revert to scattered tribes of hunter gatherers living and dying as a result of nature's unimpeded cycles.

The issues confronting public policymakers in the closing moments of this millennium are simply offshoots or extensions of issues brought to the forefront in the 1960s. In their simplest form, they involve clean air, clean water and clean land. In their most complex form, they involve very technical debates on the nature and cause of human disease such as cancer and the workings of a complex planetary ecosystem that impact global climate change.

The average American and the average public policymaker have sympathies on both sides of the debate. Public survey after public survey rates environmental concerns high on the list of American issues. Those same surveys show Americans are also highly concerned about job security, wages and the economy.

At the gut level, Americans desire a clean environment, but they know it will involve change that may harm their personal fortune. Therefore, the concept of environmentalism is accepted, but the application is feared.

This fear is especially true in the case of small business owners such as farmers and ranchers. Already burdened by high health care costs, heavy property and income tax loads, constantly changing labor and safety standards and new, highly sophisticated global competitors, these small business people tend to automatically recoil at the mention of further environmental regulation.

Farmers and ranchers feel besieged on all fronts and are unable to understand why their own public approval ratings have fallen.

Compounding the frustration is the fact that while environmental and other regulation has blossomed the political clout of agriculture is withering on the vine.

Agricultural Advocacy and the Changing Power Structure

America has become more urban and suburbanized. These demographic shifts have been picked up in census figures and translated to legislative redistricting. For example, between 1966 and 1985, the number of rural Congressional districts declined from one in three to one in five. The 1990 census is expected to show continuation of this trend. When my grandfathers farmed, Iowa had as many House seats as California—eleven each. Today, Iowa has five and California has fifty-two!

In a very short period of time, agriculture has gone from being a political powerhouse to being relatively insignificant as far as legislative representation and voting power is concerned. Compounding the problem is the fact that America's agricultural leadership is fragmented and unfocused. There is an old joke that says whenever two or more farmers get together to work on a problem at least one new farm organization is formed with fifteen subcommittees.

The so-called "general" farm organizations such as the American Farm Bureau Federation, National Farmers Union, National Farmers Organization and Grange have roots in a time of greater balance between rural and urban interests. The one newcomer to the "general" farm organization category is the American Agriculture Movement born in the late 1970s as the 70s boom turned to bust.

At the federal level, it is safe to say all of these organizations have lost influence. At the state level, their influence varies. This influence loss is due not only to the declining rural and farmer population, but to deep philosophical divisions and a belief that the organizations need to deal with issues ranging from health care to gun control.

As the influence of the general farm organizations have fallen, new "specific" commodity groups have arisen in stature and funding. These groups represent the specific interest of wheat or corn or cotton or cattle producers. Their influence has grown in part because of a unique funding mechanism called a commodity "checkoff." Most of the bulk commodities and livestock now have a small deduction made at the time of sale which is remitted to a national or state commodity organization.

Despite their relative wealth, the specific commodity organizations have also lost influence. Part of their lost influence is due to intercommodity infighting, but these groups are mostly oblivious to each other, which may be an even larger problem than their occasional squabbles. Most of their influence loss is due to the fact that budget constraints in Washington and global desires for freer trade have swamped their narrower interests.

One group of organizations that has maintained their influence are those that receive the most protection or support from the federal

government and are also relatively isolated geographically. These include sugar, peanut, tobacco, cotton and rice organizations. These organizations are single-minded, well-financed and tend to support each other on many issues.

To recap, then, we have the "general" farm organizations which have tried to be all things to all people in their particular philosophical camp and the specific commodity groups that have tended to focus only on the price and income supports or trade barriers affecting their particular commodity.

The Environmental Challenge and Strategies for the Future

As a consequence of preoccupation with philosophical ideals and specific commodity interests, the environmental challenge has largely gone unanswered by the agricultural community. There are a few notable exceptions which we will examine in a moment.

Another reason agriculture has had little influence in the environmental debate is that much of the debate is carried on in forums they find unfamiliar and many times hostile. Agricultural groups are accustomed to a warm reception in the House and Senate Agriculture Committees. Much of the environmental debate takes place outside these committees and in agencies such as the Environmental Protection Agency (EPA) and the Department of the Interior.

To their credit, environmental advocates have recognized this dynamic and have tried to reach reasonable compromises within the domain of the agricultural committee. Examples of these mutually agreeable compromises are the Conservation and Wetland Reserve Programs.

Much more divisive issues loom in the domain of nonagricultural committees. Examples include reauthorization of the Clean Water Act, wetland protection, food safety and labeling, chemical regulation and a host of other environmentally-related issues impacting agriculture and agribusiness.

Focusing on examples of agricultural success may give us an insight into strategies that the agricultural sector could employ in the future.

The first example is Proposition 39 in California. This 1988 ballot initiative was otherwise known as "Big Green." Big Green was drastic enough not only to unite agriculture, but to motivate a coalition of industries that would have been similarly impacted. This coalition of California industries pulled off a stunning upset and defeated a major environmental initiative. One of the key reasons industry was able to turn the voters around is that they were able to evaluate the cost of Proposition 39 in terms voters would understand.

Another area to watch is the courts. Recently the Washington

State Apple Commission requested contributions from agribusiness to sue the producers of the prime time news program *60 Minutes*. Apple growers believe the Natural Resources Defense Council and *60 Minutes* acted improperly regarding the chemical Alar and, in the process, seriously damaged the apple industry.

Agriculture and agribusiness may also weigh in on a recent court case castigating the federal government for not implementing an absolutely strict standard to an anticarcinogen law known as the "Delany Clause." Absent a successful legal challenge, the agricultural sector must coalesce with other industries to change the "Delany Clause" legislatively.

Unfortunately, history suggests that agriculture will only unite when presented with a clear and immediate danger. Most environmental issues are incremental or indirect, and they impact the cost of production rather than the price of a commodity. The agricultural lobby tends to be more highly motivated to action by public policies directly related to the price of a product rather than those that impact costs, such as the price of fertilizer.

Looking to the future, agricultural interest groups may be beginning to adjust their priorities. As federal funds for agricultural support continue to dwindle, their relevance to farm well-being also dwindles. Also, as trade barriers begin to fall, protectionism will become less and less important to selected commodities. These two phenomena, less subsidy money and freer trade, will leave agricultural advocates no choice but to work on policies that impact production costs and which also tend not to divide along philosophical lines.

Finding new industrial and value added markets is another area on which agriculturalists will need to focus. Industrial products may provide common ground for agriculturalist and environmentalist. Until very recently, public policies to support ethanol have been supported by both sides. Hopefully, we will be able to move beyond the current dispute involving ethanol and implementation of the Clean Air Act.

Areas of promise involve clean, nontoxic diesel fuel from vegetable oil and animal fat. Vegetable- based ink that eliminates the deinking problem with paper recycling. Building materials made from recycled products such as paper and wood which can be manufactured with the assistance of agricultural products.

It is entirely possible for agriculture to turn the debate on legislation such as the Clean Water Act from a minus to a plus. For example:

- Mandating that only easily biodegradable, nontoxic fuels be used on our navigable and recreational waters.
- Requiring that products likely to enter the sewer systems or run

off into rivers and lakes be biodegradable and nontoxic. Examples include automotive antifreeze, deicers for airplanes and hydraulic and lubricating oils for equipment working in pristine areas such as national parks and forests.

The list goes on, but the point is that some environmental initiatives provide opportunities for agriculture's unique characteristics of biodegradability and renewability.

The Changing Social Contract

In closing, it appears the social contract between agriculture and society is changing. The past contract could be characterized as simple price and income support from society in exchange for production control from the producer.

The new social contract continues to provide price and income support from society. However, society is becoming more concerned about the means of production than the quantity produced.

Agriculture could leverage the concerns of society into greater price and income support if they enlisted the assistance of powerful allies such as the environmental communities. The other side of the bargain will undoubtedly mean that agriculture makes even greater strides in areas of concern to the environmental community.

Only time will tell whether agriculture motivates itself to take advantage of environmental opportunities, whether its various elements unite to fight what they believe are unfair environmental burdens and shift their focus to priorities of the future rather than the concerns of the past.

AGRICULTURE AND ENVIRONMENTAL POLICYMAKING: ISSUES, ACTORS AND STRATEGIES—STATE GOVERNMENT PERSPECTIVE

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As American society approaches the final years of our twentieth century, major public policy debates continue to rage in both environmental and agricultural communities. Virtually every facet of the world's resources expands the list of **issues**, providing more opportunity, either for conflict or consensus. The growing issue list includes: use and management of public lands; rights of private property owners; conversions of environmentally-sensitive land to agricultural use; loss of biological diversity; access to water supplies; known and potential contamination of water and air quality from agricultural operations; use and production of agricultural chemicals; as well as debates on actual commodities produced, such as international controversies on tobacco exports and calls for reform of the global livestock industry (Brown, et al., p. 66).

Especially in the United States, the actors involved in agricultural and environmental policy have increased substantially during the past two decades, with two major shifts. First, environmental concerns are no longer the domain of a few national environmental groups. Support for environmental programs has grown substantially since the first Earth Day celebration in 1970 when more than 20 million Americans participated in well-publicized environmental celebrations. Recent polls indicate that almost three-fourths of America believes that major efforts are needed to improve environmental quality. Environmental information of various types proliferates in the media, abounds throughout school systems, appears in industry trade journals and almost overwhelms the general public. For example, no fewer than two-thirds of the top twenty-five Public Broadcasting System programs are nature and environmental documentaries (Bliss-Guest, p. 384-392).

Secondly, action has shifted away from the national scene to state and local efforts. The increased knowledge and intense public interest in social and environmental factors associated with agriculture and environmental issues have often mobilized local citizens groups. State capitols, county courthouses and city halls provide the forum

for much of today's serious discussions of public environmental and agricultural policies. Governments work with and respond to a much wider variety of actors in policy formulation—actors whose information base is vastly different and whose values and interests sometimes contrast starkly. The resulting laws, ordinances and policies affect state agencies and elected officials much more directly than in previous years.

Rather than posing new problems, these changes provide an opportunity for various actors to bring these communities together, through mechanisms and strategies not always available at the national level. Through methods ranging from officially appointed state-level commissions to community discussion groups and town forums, state and local agricultural and environmental officials have a major opportunity. Moreover, state and local policymakers have more real responsibility to provide a common dialogue for building new policies to address the even more complex issues in agriculture and environmental protection. Fortunately, new tools and mechanisms are available with some demonstrated successes.

Background on Agricultural and Environmental Policy Issues

State environmental administrators, particularly in states with rural areas, confront an astounding array of agricultural and environmental issues. A typical day can include contentious litigation on landfill permits, water rights negotiations, wetlands controversies, water quality regulations and animal feedlots, and environmental emergency planning associated with agricultural chemical production. In states like Kentucky with lots of rivers and lakes, emergency spills with resulting drinking water contamination often appear on the day's list of responsibilities. However these seem to occur most frequently at night and on weekends—particularly holiday weekends.

In spite of this variety of issues, devising strategies for addressing solid and hazardous waste problems dwarfed many of the other issues confronting state environmental managers throughout the mid to late 1980s. As burgeoning landfills in metropolitan areas began to close, rural land, particularly in the southern United States, grew in popularity as potential waste disposal sites (Fritsch, p. 4).

Rural community leaders often discussed proposed municipal landfills but also faced decisions on recommendations for hazardous waste treatment facilities and incinerators as well. Stiff opposition to these facilities frequently leads to discussions on general land management issues, land use planning, and even the preservation of agricultural land.

A major environmental policy emerging from these discussions centered on state level mandates for recycling and general waste reduction policies and, in some cases, the packaging of farm chem-

icals. In the recycling arena, state governments took the lead over federal action, with a majority of legislatures enacting some sort of recycling legislation during this era. The general waste discussion moved many states with agricultural production, including Nebraska, Minnesota and North Dakota, to implement programs on recycling of farm chemical packaging.

State governments also provided the arena for confrontational discussions on other major land management issues involving agriculture and environmental policy, including the value and significance of environmentally sensitive areas, private property rights associated with these areas, and wetlands protection. During the 1992 state legislative sessions, several states enacted some version of private property rights legislation associated with environmental protection, while numerous statehouses took up the debate without finalizing new laws.

Land management policies focused mostly on use of the land, but water management historically featured water supply issues. Throughout the 1970s the water management debates centered on opposition to building major reservoirs and other impoundments. Indeed, as droughts continued in the western United States, water rights controversies remain a major concern with several states and communities. Water conservation programs and negotiations concerning alternatives to large impoundments have been features of state and local strategies for merging agricultural water needs and environmental interests.

While water issues involving agriculture and environment have historically focused on water supply controversies, issues concerning contamination from runoff have emerged as a critical state concern in recent years. Water quality problems from nonpoint sources will receive additional attention through national discussion of the Clean Water Act Reauthorization. Groundwater pollution problems continue to be documented, as does the impact of certain pesticides on wildlife.

However, states and local governments also provide the proving ground for testing the practices to address water quality. Several state and local governments, working with diverse interests, are implementing demonstration projects for runoff controls, through carefully developed programs with high levels of local input.

Air quality policy discussions have focused on dust and emissions from farming operations, odor problems and concerns. For example fertilized soils emit two to ten times as much nitrous oxide as unfertilized soils and pastures. Livestock and fertilizers account for 80 to 90 percent of ammonia emissions. Air toxic issues, associated with the use of chemicals in agricultural production, have provided additional attention to agricultural and environmental policies.

As the national Community Right to Know laws enabled citizen

groups to learn about toxic emissions from chemical production and other manufacturing operations, local interest in reducing toxic use in the work place and the environment has increased dramatically. Numerous states and some local governments have implemented toxic use reduction programs, more stringent than national standards, addressing citizen concerns about toxic air and water emissions from these operations, many associated with agricultural production (U.S. Environmental Protection Agency, p. 128-133).

An additional overriding issue discussion emerging from intense examination of agriculture and environmental policy is the question of whether today's agricultural practices are ecologically sustainable. A basic reexamination of thinking about the relationship between environmental and agricultural policy issues is underway. Farmers are increasingly aware of the environmental toll taken by conventional farming practices. Some farmers, encouraged by scientists, public interest groups and others, are using a variety of alternative practices that help reduce pollution and maintain farm resources.

Major State Environmental Agency Changes

As the general public became more interested in environmental issues and activism became more decentralized around the nation, an additional major trend affected agricultural and environmental policy development. Because of national emphasis on decentralization of federal programs throughout the 1980s and 1990s, the nation's environmental laws have been delegated slowly to state governments. Throughout almost all the country, state environmental agencies, rather than the centralized offices of the U.S. Environmental Protection Agency (EPA), implement the national Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, and related environmental enforcement programs.

Although this shift may appear insignificant in association with agricultural policy, the change is demonstrated by growth in funding for state environmental enforcement and increasing numbers of state-level inspectors and environmental attorneys which has resulted in the fines and penalties associated with state environmental regulatory programs. Essentially, combining the environmental enforcement shift to state governments with increased numbers of local activist groups provided numerous additional opportunities for more local input, discussion and even litigation associated with environmental and agricultural issues.

In addition, many local and grassroots groups are rejecting viewpoints of major national environmental organizations, calling for more stringent approaches and, usually, less negotiation and mediated environmental laws and regulations. America's grassroots environmental and social justice organizations have often linked

their interests and concerns with those in other nations, focusing on concerns with transnational corporations and environmental issues associated with international trade policies. For example, the Minnesota-based International Institute for Sustainable Agriculture, at the recent United Nations Conference on Environment and Development, announced their own global conference on sustainable agriculture to be held in June, 1993. The conference will feature a citizen-based international discussion on alternatives to current agriculture production in both the developed and developing nations.

In summary, the number of actors in agriculture and environmental policy continues to grow dramatically, while also increasing in diversity, information and access to resources. The increases call for more participatory, diverse and decentralized strategies for policy development and implementation.

Challenges and Strategies

Farming in industrialized countries has successfully produced food and fiber, yet it also has caused environmental degradation, creating serious problems for farmers (such as soil erosion) and, even worse, off-farm problems (such as groundwater contamination). These problems, epitomized by a concern that current agricultural practices are not sustainable, have led many agricultural scientists, economists and farmers to rethink conventional farming practices. What seems to be emerging is a range of environmentally beneficial farming practices—a synthesis based on both old, proven ideas and a new understanding of natural nutrient cycles and ecological relationships (Hammond, p. 99). Throughout the country, new relationships are being forged among various groups, including universities, public interest groups, farmers and community leaders. State and local governments are challenged to work with the wide variety of interests and bring the actors together in discussions which result in meaningful actions and strategies to address identified problems.

Several programs have worked diligently to address these concerns. For example, in Minnesota the legislature enacted a statewide water supply planning law, requiring each county and community to develop a plan for addressing water quality. Since this is a highly agricultural state, government officials worked with a wide variety of groups at the local level to develop a dialogue and implement plans that received a high degree of public involvement and input.

Handling conflicts is a frequent issue confronting state and local governments attempting to bring together diverse groups. Some governments and universities have worked to implement conflict resolution training into the policy development process in order to give government officials and others the tools to provide for meaningful discussions by all the parties.

New organizational structures and institutional arrangements often are needed. In Puget Sound an intrastate regional approach provides for oversight and local government involvement. The Puget Sound Basin in western Washington state has worked on a nonpoint source control program as an important part of their water planning. A nomination process guided the process for identifying all involved parties and the state provided direct assistance for preparing guidelines for watershed management.

The United States' and Canada's Great Lakes Water Quality Agreement provides the model for bringing together an extremely diverse group of interests within a sometimes complex organizational structure to develop consensus on environmental and agricultural issues. Other regional efforts are evolving as well, including the Chesapeake Bay initiative and the Gulf of Mexico effort.

In summary, strategies for agricultural and environmental policy development and implementation require extensive planning and involvement of a community of interests more diverse than ever before. National policymakers must clearly consider the high level of intense local and state activity in the policy areas.

Additionally, governments must look outside their own structure for interest, resources and sometimes even the training and information to bring together a consensus group. A critical element in merging agricultural and environmental policy development, aside from the overriding debate on the sustainability of current agricultural practices, includes training and implementation of processes, as well as the institutional structure, to address conflict. National, state and local public policy groups, university and college programs, as well as individual community leaders can serve the catalyst role, sometimes the critical resource needed.

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INNOVATION IN ENVIRONMENTAL POLICY EDUCATION THROUGH COALITIONS: THE GROUNDWATER POLICY EDUCATION PROJECT

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The Groundwater Policy Education Project (GPEP) has been a collaborative effort of Cooperative Extension, the Soil and Water Conservation Society and the Freshwater Foundation. It was one of eleven projects funded from 1988-92 by the Innovative Public Policy Education Program of the Kellogg Foundation and Farm Foundation. This program's theme was: that advances in education and policymaking on controversial issues could be enhanced through formation of coalitions of diverse organizations committed to balance and objectivity.

Project Goals and Strategies

The overall goal of GPEP was to enhance state and local decision makers' abilities to formulate public policies for improved management of groundwater resources through formation of coalitions. Specific objectives were to: 1) broaden views of groundwater issues and policy alternatives; 2) increase support and resources, primarily of an informational nature, available to state and local decision makers; and 3) increase decision makers' understanding of the social, behavioral and institutional dimensions of groundwater issues.

In order to accomplish the above objectives, a set of educational resources on rural groundwater management and policy was created. These materials included: the March/April, 1990, *Journal of Soil and Water Conservation*, a special issue entitled "Rural Groundwater Quality Management: Emerging Issues and Public Policies for the 1990s" published by the Soil and Water Conservation Society; the Groundwater and Public Policy leaflet series published by the Freshwater Foundation; and a pilot project leaders' handbook. These materials were utilized in pilot projects developed and conducted by coalitions in California, Florida, Iowa, New York, North Carolina, Pennsylvania and Wisconsin over an eighteen-month period in 1990 and 1991.

Pilot Project Coalitions

In each state, partnerships were formed between Cooperative Extension and state and local agencies, interest groups and educational and research organizations (Table 1). These coalitions differed in the amount of extension representation, extent of past working relationships, organizational structure (e.g., number of groups, formal vs. informal, sharing of resources, decision authority and workload), target audience (state or local decision makers; policymakers vs. uninvolved citizens or groups) and other factors.

Table 1. Pilot Project Coalitions and Leaders

California:	University of California Extension on three campuses, the Department of Agricultural and Resource Economics, University of California at Berkeley, Western Water Education Foundation, University of California Water Resources Center, a group process expert, and a public policy analysis expert. Leader: Tim Wallace, University of California, Berkeley.
Florida:	*Florida Department of Environmental Regulation, the St. Johns River Management District, the South Florida Water Management District, the University of Florida's College of Law, a private law firm that specializes in water, land use and environmental law, the Florida Cooperative Extension Service, and the University of Florida's Institute of Food and Agricultural Sciences.* *Leader: Roy Carriker, University of Florida.*
Iowa:	Iowa State University Cooperative Extension, Iowa Natural Heritage Association, and Winneshiek County local organizations including American Association of University Women, Citizens for Responsible Waste Alternatives, Decorah Parent-Teachers Association, Winneshiek County Farm Bureau, Winneshiek County Cattlemen's Association, Winneshiek County Resource Enhancement and Protection Committee. Leader: Steve Padgitt, Iowa State University.
New York:	Cornell Cooperative Extension, regional planning and development boards, New York Department of Environmental Conservation, and other federal and state agencies. Leader: David Allee, Cornell University.
North Carolina:	The Groundwater Section—Division of Environmental Management, North Carolina Cooperative Extension, and state offices of the NC Association of County Commissioners and the League of Municipalities. The local coalition included Extension and the Quality of Natural Resources Committee, which represented environmental, city and county government, commercial/industrial, and agricultural interests in Gaston County. Leader: Leon Danielson, North Carolina State University.
Pennsylvania:	Penn State Cooperative Extension, League of Women Voters of Pennsylvania Citizen Education Fund. Leader: Charles Abdalla, Pennsylvania State University.
Wisconsin:	Agencies, local government associations, manufacturing and commerce representatives, the Farm Bureau, Environment Wisconsin, and the University of Wisconsin Extension. Leader: Stephen Born, University of Wisconsin, Madison.

Educational strategies used in the projects included: needs assessment surveys, state and local conferences or workshops, preparation of localized educational materials, media interactions, "train the trainer" events, and ongoing evaluation processes to monitor project progress. Several projects utilized funds to build upon or enhance an ongoing effort. One project undertook specific steps at the outset to institutionalize their coalition.

Selected Outcomes

The outcomes of GPEP can be described at both the national and pilot project level. At the national level, the project provided greater emphasis and attention to the public policy and institutional aspects of groundwater quality issues. This was primarily accomplished through publication in the Spring, 1990, special issue of the *Journal of Soil and Water Conservation*. In 1991 this publication was one of two given a Community Conservation Award by the Natural Resources Council of America.

Another measure of overall project success was the degree to which key project ideas, educational materials and methods were sustained beyond the project time period or disseminated across geographic boundaries. In 1991, public policy education became one of six national priority areas for Cooperative Extension programming under the President's Water Quality Initiative within the U.S. Department of Agriculture (USDA). The federal Extension Service of the USDA also funded a project to disseminate the project's materials and methods to extension faculty and staff throughout the country. The purpose of the workshops was to encourage and strengthen extension programming in water policy education. Workshops were conducted in Denver, Colorado, and Arlington, Virginia during the spring of 1992. Public policy education, coalition building with examples from pilot states, and the Groundwater and Public Policy leaflet series served as the basis for the workshop curriculum. More than 130 representatives from extension organizations in forty-one states, the District of Columbia, Guam and Puerto Rico attended the workshops.

Selected Pilot Project Outcomes

Documentation of project outcomes and evaluation of the success of the coalition approach and educational strategies undertaken were recently completed. The project faced several evaluation challenges, such as the diversity of the state situations and the projects themselves, which made generalizations about the potential of coalitions difficult. Project outcomes were measured along the following continuum developed by Greene and Hahn: 1) changes in coalition members; 2) changes in educational program participants; 3) changes in the policy process; and 4) changes in the issues (e.g.,

framing of issue, recognition of linkages among issues, development or emergence of potential or actual solutions). Most projects reported changes for coalition members and program participants in terms of new skills; expanded knowledge of groundwater issues and policy processes; and increased understanding and appreciation of the perspectives of other participants' in the policy process. However, fewer projects obtained outcomes further along this continuum related to changes in item (3)—changes in the policy process—and item (4)—changes in the issues—within the project period.

Two pilot projects were able to achieve outcomes related to changes in policy process and changes in the issues. The following presentations by Steve Padgitt and Leon Danielson describe the context, strategies, outcomes, and "lessons learned" for local level process-oriented projects in Iowa and North Carolina, respectively.

Findings and Implications

It is worth noting some of the characteristics of pilot projects that were found to be associated with outcomes related to policy level, including items (3) and (4) described in the last section. Progress along the continuum of outcomes is indicative of the project's success providing information and experiences that are useful to policymaking. The findings are taken from Abdalla and Sobel (1992) and Imsland (1991).

Scale. Two projects, Iowa and North Carolina, produced the greatest number of outcomes within the time frame of the project. Both projects had a county level focus and targeted those affected by, but not currently involved in, policymaking. The county-level focus allowed a matching of resources with an appropriate project scale that permitted a sustained impact on audiences. Also, by undertaking needs assessments and establishing local study committees, each project gave a great deal of attention to process issues, as they educated and involved stakeholders in policymaking. These projects were more successful in going beyond information provision to the more challenging areas of facilitating dialogue and empowerment of citizens and stakeholders (Hahn et al.).

Diversity. Coalitions with greater representation from organizations outside extension employed more strategies and achieved a greater number of outcomes. The local level coalitions in Iowa and North Carolina had the least amount of extension representation. Thus, diverse coalitions appear to have greater potential to provide education affecting the policy process. This may suggest that outside organizations can make Cooperative Extension more productive.

Coalitions that were formed from new relationships spent more time in the coalition-building process than those organizations that had worked together prior to the project. Although time consuming

and effort intensive, building new relationships forced issues to come out on the table, had some level of creative tension, and was not business as usual for the organizations. Diverse "new" relationships seem to have created the synergistic effects of working together.

Coalitions that are both diverse and have an early "empowerment" of all members are more likely to have a shared agenda, resulting in a greater number of strategies. Coalitions made up of different organizations that truly cooperate can bring "new" ideas to a coalition, either in terms of sharing techniques, combining and building on others' experiences with educational strategies, or developing unique approaches. Collaboration that goes beyond sharing the workload to creating new agendas resulted in diverse approaches, broader audiences, and more outcomes further along the change continuum.

Leadership. The working processes of the coalitions influenced their productivity. Both "task" and "process" leadership skills are needed to build and maintain positive working relationships and strong coalitions. Someone must keep things going and provide direction. Keeping people on track and making sure everyone is following through on tasks is needed when working with a group. If there is a breakdown in responsibilities or commitment it needs to be dealt with quickly. This task is an element of accountability. Communication is a leadership function. Both formal and informal communication aid by providing clarity to tasks, documenting experiences needed for a sense of continuity, and serving as a group maintenance activity which allows members to be informed and feel part of the process. There is a need to document what is happening, follow up after meetings or activities, and keep coalition members in the information loop.

Attention to Process. Coalition building and maintenance tasks are ongoing. Coalitions require attention to group process and working relationships. Time and effort are required, as well as the recognition of the importance of interpersonal relationships, for productive functioning of a group. This is clearly seen when membership changes and rebuilding are needed. Careful foundation building in the beginning is an important element evidenced in both the pilot programs and the national coalition. There is a need for people to get to know one another early in the coalition-building process. It is important to focus on the basic interests and goals of each organization and each member before the coalition structure and goals are addressed. Coalition members need to have status, power or authority related to the project. The stage of the project when members become fully involved, or empowered, affects the ownership and responsibility for coalition activities and outcomes.

Conclusions

Based on the experiences and outcomes resulting thus far, it appears coalitions have significant potential as an innovative means for conducting policy education about environmental issues. What are the specific benefits of a coalition approach? The benefits go well beyond reduced duplication of effort, increased coordination and sharing of networks. If organizations truly cooperate in program planning and are willing to explore new ideas and educational delivery methods, a coalition approach can result in a synergism that improves the quantity and quality of educational interactions and experiences. The coalition may itself create an image, a credibility and an objectivity that the organizations alone could not achieve.

A coalition approach can increase the effectiveness of organizations and allow them to learn and adapt to new issues and audiences. For example, traditional ideas or methods from one organization can be shared or combined to create new problem definitions or educational strategies. Collaboration can lead to innovative education and involvement strategies which better meet the needs of diverse audiences. Finally, the development of coalitions can in some cases create mechanisms for effectively transforming data into information that can improve policymaking processes and decisions.

The above mentioned benefits are not obtained without cost. If coalitions are made up of diverse organizations with little previous working relationships, a considerable investment of time and effort will be needed to build and maintain a coalition over time. It is also likely that coalition building may be frustrating, and at times painful, as a shared agenda and purpose is created. Why, one might ask, should we work so hard?

One answer to this question is related to the great need to increase understanding of environmental policy issues and the importance of informed and involved citizens to public policymaking. There are also rewards from the satisfaction of knowing that something could not have been accomplished without a coalition you helped to create and the fun experienced while working and learning with new and interesting people.

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INITIATING A COALITION FOR GROUNDWATER POLICY EDUCATION: OBSERVATIONS AND LESSONS FROM A RURAL IOWA COUNTY

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In 1988 the Groundwater Public Policy Education Project (GPEP) was funded as part of Farm Foundation's and the Kellogg Foundation's set of projects on coalition building for public policy education. Among other activities, the GPEP effort included pilot projects in seven states to develop and apply a "coalition approach" to deliver public policy education programs. One of the pilot states was Iowa, and I was a liaison to, and to some degree coordinated, the Iowa pilot project.

Context

In 1987, the Iowa General Assembly passed a comprehensive Groundwater Protection Act. Prior to this legislation, the Iowa State University Extension Service conducted seminars on water policy throughout the state. Additionally, a series of news articles on groundwater policy was prepared by a state extension specialist. These news releases were widely used by the state's media. Consequently, another statewide initiative in water policy education was discounted when the Iowa GPEP pilot project was proposed. Rather, a grassroots effort in a single rural county was chosen, Winneshiek, population 21,000, located in far northeastern Iowa.

Among the reasons this county was selected were its potential for groundwater contamination, its unique geological features that were not fully addressed in the statewide legislation, and the lack of evidence that local elected officials or voluntary civic groups were pursuing additional local policy options. Indeed, salience of water quality as a social issue in Winneshiek County appeared to be secondary to more visible issues confronting residents on a more recurring basis, such as jobs, education, and agricultural profitability.

Approximately three years before the pilot project began, a sample of rural residents in the county served as a comparative group for an unrelated water quality project in a nearby county. At that time, survey findings indicated Winneshiek County farmers were less concerned about groundwater quality than were respondents in

the nearby county, but levels of concern among the rural nonfarm populations were similar between the two counties (Padgitt).

In Winneshiek County, the local economy is primarily diversified agriculture, including dairy, small grains and forage crops. This mix makes local agriculture akin to that in neighboring Minnesota and Wisconsin as much as to the predominant row crop (corn and soybeans) and hog operations that pervade farming throughout much of the remainder of the state. In total, agriculture occupies 95 percent of the county's land area and nearly half of the population lives on farms or in open-county areas.

In many places, only a thin mantle of topsoil overlays fractured limestone bedrock, making groundwater susceptible to contamination from the surface. Further, because of the "karst" geology, sinkholes and disappearing streams provide direct conduits from the surface to underground water supplies. Nonetheless, residents in Winneshiek County rely almost exclusively upon groundwater for drinking water as well as for other household and commercial needs.

Although no major groundwater problems had been identified on a widespread basis in the county, there were *a priori* reasons for concern. Potential threats to groundwater include livestock wastes, agricultural fertilizers and pesticides, nonfarm use of fertilizers and pesticides, residential, commercial and industrial wastes, and roadway de-icing products. In addition to the sinkholes, other pathways for groundwater contamination include wells and abandoned wells, underground storage tanks, septic systems and the landfill. Also, emerging evidence suggested groundwater in the county was being affected by nitrates and pesticides. Further, initial testing had found traces of several synthetic organic compounds that may have been leaching from the local landfill.

Implementation

The impetus for the project was participating in GPEP rather than the more typical pattern of acting upon a request received from a local area. Further, a decision was reached early in the pilot to deemphasize the role of the Extension Service. This decision was both strategic and pragmatic. Strategically, and consistent with assumptions of the larger GPEP project, there was a commitment to emphasize a shared partnership in the effort. Also, extension was not necessarily recognized as being a neutral organization for policy education about groundwater.

The decision was pragmatic in the sense that the local extension staff had limited policy education expertise, and campus- and area-based public policy specialists within the system were previously committed to other programming. Consequently, a partnership was forged with the Iowa Natural Heritage Foundation. The foundation

and extension had previously worked cooperatively on groundwater quality projects. At the time of the GPEP pilot, the foundation was interested in expanding its water quality activities in northeastern Iowa; consequently, the objectives of the pilot project were compatible with those of the foundation. As a result, the bulk of the financial resources for the pilot project was subcontracted to the Iowa Natural Heritage Foundation to hire a local coordinator for the project. The local coordinator was a private consultant and a new resident to the county. She maintained a private office rather than being housed at the local extension office.

Four objectives were identified for the project to be implemented at the county level:

- Develop a coalition of local organizations to conduct policy education activities.
- Enhance awareness of and knowledge about public policy options that could be adopted at the local level.
- Bring policy issues before decision makers.
- Encourage and support deliberations about groundwater policy issues and options at the local level.

Forming nurturing the coalition. Organizations contacted to participate in the project were mutually selected by the local coordinator, local extension staff, and liaisons from extension and the Natural Heritage Foundation. Typically the organizations contacted did not define public policy as a major component of their mission. Further, volunteer representatives were novices at public policy education. Although several had interests related to groundwater, they were conditioned to respond to more tangible actions or activities than were offered with this invitation. Part of the vagueness associated with the invitations to join the coalition was conscious and deliberate, i.e. the group was expected to develop its own agenda, and part of it was the inherent nature of public policy education. In retrospect, involving persons having a greater repertoire of public policy experience would have provided the understanding, expertise, and leadership to make the local coordinator role less formidable. Unfortunately, a GPEP-sponsored conference for volunteers in the several pilot states included examples of activities that may have exacerbated as much as alleviated the Iowa group's anxieties about the public policy process.

Ultimately, eight organizations joined and provided representatives for project activities (Iowa Natural Heritage Foundation, Iowa State University Extension, American Association of University Women, Citizens for Responsible Waste Alternatives, Decorah Parent-Teacher's Association, Winneshiek County Cattlemen's Association, Winneshiek County Farm Bureau and Winneshiek County Resource Enhancement and Protection Committee).

Over a period of fifteen months, monthly meetings or activities were held, most often at the County Extension office. During the in-

terim, the local project coordinator spent considerable time and energies maintaining interpersonal and written communication with participants. Except for a few representatives, the coalition activities appeared to be of secondary priority.

Coalition activities. Three educational efforts characterized the project. One was education for the participants themselves, a second was developing background materials for local leaders and policy makers, and a third was policy education with the public.

Education for the participants took several forms. The monthly gatherings were designed to proceed with the agenda for policymakers and the public, but as much attention was assigned to study and learning by the participants themselves. At each monthly gathering at least half of the time was spent with a resource person. This began with further understanding of the policy process and expanded to include technical information, policy options at the local level, and writing model ordinances.

Participants were drawn into the project by accepting requests to assist the local coordinator in conducting a series of focus groups among individuals having interests related to water quality. Ultimately, eight focus group sessions were conducted, one each with chambers of commerce and community betterment groups, agrichemical dealers, County Soil and Water Conservation District Commissioners, the County Board of Supervisors, public school teachers, a consumer group, landowners, and the local board of health. These hour-long discussions were administered by the local coordinator with the help of a volunteer member from the coalition. Summaries of the focus groups were shared with other coalition members, and themes from them were a major factor in designing the public forums and public information efforts. In addition to the focus groups, a sample survey of residents was conducted to assess, in a more representative way, the priority being assigned to the issue, public perceptions of sources threatening groundwater, and attitudes about public policy options.

From this background, a series of three public forums was held: "What Can the State Do?", "What Can the County Do?" and "What Can Individuals Do?". The last forum concerning individual action focused prudent individual behaviors to protect the environment rather than involvement in the public policy process.

An effort, reasonably successful, was made to recruit elected officials to the public forums. In addition, the local coordinator and a member of the coalition visited deliberative bodies (County Soil and Water District Commissioners, County Board of Supervisors and County Planning and Zoning Commission) and urged actions to protect groundwater. Also, appearances were made before several of the sponsoring organizations as well as the media.

The final product developed by the project was a reference man-

ual. It consisted of a review of groundwater resources in the county, sources and routes of contamination, and policy options for protecting the county's groundwater. This document was delivered by the local coordinator and a coalition volunteer to elected officials and influentials throughout the county, including most persons who participated in the focus groups. The document was also widely deposited in local libraries.

Coalition outcomes. Three kinds of outcome were identified at the close of the project's funding. One was increased knowledge. This results from documentation archived in the published report, public awareness through media activities and the public forums, and personal growth of coalition members. Another outcome was the capacity of the county to act if resources become more severely threatened. New linkages were formed among individuals and organizations, and a cadre of persons now have greater sophistication to participate in public policy deliberations. Mutual understanding and cooperation among dissimilar groups were established. This should help facilitate trust in the future when working toward a collective goal is more salient. Finally, some policy outcomes, although modest, were realized. New language enabling local controls to protect groundwater was presented and included in the county's Comprehensive Zoning Plan. Groundwater was included in the Soil and Water District Commissioners five-year resource protection plan, and member groups in the coalition adopted a statement on the importance of groundwater quality for their respective organizations.

Implications for Future Efforts

Coalitions for public policy education. Based on the Iowa experience as well as those in other pilot states, the original assumption of the Farm Foundation and the Kellogg Foundation that extension could be more effective in public policy education if it included other organizations in a coalition framework continues to have merit (Hahn, et al.). Because extension is not universally perceived to be a neutral organization, the coalition approach adds credibility to policy education initiatives. Also, the coalition format allows greater ease when there are efforts to move further along the policy education cycle (House). Traditionally, extension staff become highly anxious when policy education goes beyond clarifying alternatives and consequences. The coalition approach facilitates action steps.

Coalition as a term. At least at the grassroots level, connotations associated with "coalition" make it a less than ideal term for an activity that purports to be neutral and balanced. In some circles, public policy education is, *a priori*, defined as partisan. Using the term "coalition" adds to rather than detracts from this liability. This project soon dropped any reference to coalition. For a while, the term "consortium" was used as a substitute, but it was also abandoned as being too "high brow." Eventually, participating organizations and

volunteers were merely referred to as co-sponsors and their representatives. "Advisory group" was not appropriate because there was not a dominant organization.

Absence of a lead organization. As initially designed, there were advantages to this project not having a lead organization, but there were also disadvantages. The project's successes were largely traceable to the local coordinator. Although she was a member of the community and active in local civic affairs, once the project ended, so did ongoing coalition activities. Personally, she was greatly empowered with this project, but the continuity with participating individuals and organizations soon diminished when the formal part of the project ended. The Iowa Natural Heritage Foundation did not have a sufficient county-based organization to nurture the group. The local county extension staff might still assume this role. During the project, local extension staff members were active but were careful not be dominate. Potentially, recent structural changes in the extension organization and redefinition of the local agent's role could give impetus to greater attention to public policy locally. If so, the pilot experience would be a major asset and might be carried forward.

Groundwater, public policy, and grassroots involvement. A coalition for groundwater and public policy education is highly specific. In sparsely populated areas in which elected officials are largely part-time or voluntary and where organization memberships significantly overlap, topical coalitions for public policy education is problematic, especially if persistence over an extended period of time is desired. A viable alternative might be a coalition pursuing a more generic agenda whereby over time a spectrum of issues would be studied. Membership in such a coalition would be somewhat fluid and change depending upon the issue being addressed. Some groups, such as the League of Women Voters, have been successful in bridging a wide range of topics. In this pilot, the American Association of University Women was initially thought to fulfill this role locally.

In all associations, organizational maintenance activities are necessary but sometimes laborious. Because of the more tenuous nature of coalitions, such maintenance is even more critical. In the Iowa pilot, the paid coordinator served this role well. Unfortunately, a "true believer" did not emerge from the volunteers to sustain the coalition after the project ended.

Timing for coalitions. This project had an externally defined life course of less than two years. As a result, there was not a natural evolution through which interests coalesced or events occurred. Rather, participation was solicited and development of the group was forced. Conceivably, coalitions can emerge in a short period of time, certainly less than two years, but in many settings coalition development might take much longer. Deliberate manipulation of events brings with it a risk of creating an artificial environment.

At the grassroots level, cynicism can become associated with public policy forums even when they are promoted as balanced or objective. Often, there is a common belief that some hidden agenda or predetermined conclusion is a driving force. A broad-based coalition is at least a partial solution, but it is not necessarily an easy one. The energies to develop and sustain a coalition are significant.

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GROUNDWATER POLICY EDUCATION PROJECT: NORTH CAROLINA

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In a recent paper, Otto Doering notes that an expanded and "more service oriented" role of government has citizens "acting more and more like clients and less and less like participants" (Doering p.1) in most of the public policy issues faced by society today. As a result of greater involvement of government, citizens have fewer opportunities to be involved in selecting key issues that will be the focus of local policy debate or in discussing alternatives and consequences of policies that might resolve these issues. In addition, a source of frustration for those of us working in the field of public policy education is that many citizens may prefer it that way because they either lack the time, interest or expertise to become involved. Successful grass-roots policymaking is not easy and places heavy responsibilities upon both citizens and policy educators to make it work.

The North Carolina pilot effort for the Groundwater Policy Education Project addressed this issue by giving citizens the power, the responsibility and the motivation to make their own decisions. This included identification of priority issues to be given attention, identification of alternative policies and their consequences, and the making of final policy choices. Several motivating factors and philosophies guided the pilot program effort.

First, the project was an experiment to test the value of coalition building, making it easier to "let go" of the program and to put decision-making power in the hands of all participants. Second, I strongly support the view expressed by Judy Rogers at the 1990 National Public Policy Education Conference. She said that policy decisions today are made in a more diverse, turbulent and complex world and suggested that effective leaders are no longer called upon simply to plan, organize and control the agendas of groups they are leading (Rogers). Instead, effective leaders today must be team players, with skills in areas such as facilitation, motivation, communication, collaboration and mediation and, in addition, must wish to empower others rather than to showcase their own abilities. Third, it is becoming clear that successful public policy education programs must focus upon both process and content. In today's high-tech world,

policymakers are awash in technical data that requires educators to spend considerable time to find and make available timely and understandable information, and to provide any other "content" information about the issues and policy alternatives that are needed. Yet, without attention to process skills—such as methods for forming coalitions and getting people to participate; techniques for communicating among coalition members and with the public; networking; and collaboration—progress toward resolution of the issues will be difficult.

Situation

Groundwater is an important resource for the state of North Carolina because of abundant groundwater supplies in the Coastal Plain and because of the rural character of the state. It is estimated that 3.2 million of the 5.9 million North Carolinians (55 percent) rely on groundwater for their water supply. In rural areas, where private wells predominate, dependence on groundwater approaches 100 percent. Gaston County is located in southwestern North Carolina, west of Mecklenburg County and the city of Charlotte. The 1990 population of Gaston County was 175,093; it contains thirteen municipalities; its largest city is Gastonia, with a 1990 population of 55,480.

Coalitions

The North Carolina Pilot Project involved two coalition-building efforts, one at the state level and another at the county level. These were conducted because of needs expressed in surveys, the desire to develop working relationships with state-level local government associations, and because of ongoing North Carolina State University-Gaston County cooperative activities that provided a unique pilot at the local level.

The state-level coalition included the North Carolina Cooperative Extension Service, the North Carolina Association of County Commissioners and the North Carolina League of Municipalities. Coalition members were chosen because of their statewide perspectives; their ties to local governmental entities; and their knowledge of state agency resources, responsibilities and capabilities. Coalition-building with these state-level organizations was done in hopes that activities could be planned with a top-down perspective to achieve intergovernmental goals related to use of information, communication and education.

The county-level coalition is comprised of extension and Gaston County's highly active Quality of Natural Resources Commission (QNRC). In 1988 the Board of County Commissioners established the QNRC to: 1) examine the state of natural resources in Gaston County; 2) review environmental concerns; and 3) develop a consensus on

recommendations. The fifty-one-member QNRC includes elected and appointed local government officials and representatives of industry and business, public agencies, environmental action groups, and the general public from all parts of the county.

The QNRC membership formed four committees to more effectively handle issues regarding specific resources: 1) Groundwater, 2) Surface Water, 3) Air Quality, and 4) Education/Policy. Representatives from air, ground and surface water committees were assigned to the Education/Policy Committee to insure coordination of the public policy education effort.

Goals and Objectives

The intended outcomes common to both state and county pilot projects were to:

1. Increase understanding of the role federal, state and local agencies and officials have in protecting groundwater;
2. Increase information flow between federal, state and local governments;
3. Provide experiences that increase the abilities of local officials to make sound groundwater policy decisions; and
4. Increase understanding of groundwater quality issues, including policy and management alternatives and their impacts.

Additional objectives for the county pilot included:

1. Providing a thorough understanding of the air, land and water resources and resource-use issues in the county;
2. Establishing priorities for local action such as setting policy goals, ranking areas of greatest concern in order to target policy efforts, and identifying associated information needs; and
3. Developing an understanding of local government jurisdiction, options and responsibilities for protecting the county's resources.

The audience for the pilot project included rural and urban citizens, local officials and state officials with heavy focus upon non-traditional extension clientele.

Implementation

State Coalition

The state coalition was used to choose among alternative groundwater activities that would foster increased communication and flow of information between state and local decision-making levels. Because the coalition was formed at the state-level, the initial task was to determine whether some state-level activity might be effective,

what the nature of such an activity might be, whether a state-level conference was or was not needed, and whether regional conferences would be more effective. A meeting of the coalition was held in June, 1990, at which time a decision was made to hold a statewide groundwater conference focusing on local city and county officials, and state agency personnel. The conference was held in February, 1991, (the first ever in the state), and a second was held in March, 1992.

County Coalition

The Comprehensive Education Program and Policy Development tasks of the Gaston County QNRC Project began in December, 1990. Efforts were focused first on developing a plan for educating identified publics in the county about environmental issues and, second, on assisting QNRC members to reach a consensus on alternative environmental policy actions to be recommended to the Board of County Commissioners.

Education Program Development. A detailed description of steps and procedures for developing an educational program was drafted in December, 1990. The purpose of the listing was to define the step-by-step process and to identify committee responsibilities for moving the project forward. In defining roles for the various committees, a twelve-step procedure was developed to guide the coalition members toward their overall objective.

Each resource committee met separately during January and February, 1991, to define its education agenda. A nominal group technique was used to guide the group members through the process and to reach a consensus on goals, objectives, issues, audiences and program elements. At the first two meetings the program development process was carefully described and handouts were distributed showing how the various program elements (goals, objectives, issues, target audiences and action elements) could result in a final program. Emphasis was placed on reaching consensus on the issues to be addressed by the educational program. At the end of each work group session, the results from each committee were organized and rewritten and sent to the coalition members for their comments and additions.

The Education/Policy Committee was responsible for developing and coordinating the overall educational program encompassing groundwater, surface water, and air quality. Because of the ambitiousness of committee plans, a four-year timetable for completion was established. It is intended that the plan will be updated annually as activities are completed and new ones identified.

Policy Development. As noted, the charge to the QNRC by the Board of County Commissioners included development of a consensus on policy recommendations to be made to the Board. Using a

policy process similar to that of the education program, the resource committees met separately to work on issues, goals, objectives and policy alternatives. A seven-step process was outlined. However, there were important differences in the process applied by each committee, with the committees approaching each issue differently as circumstances warranted.

The initial step in the policy development process was to determine which groundwater, surface water and air quality issues were most pressing and needed to be addressed first. A lengthy list of potential local policy issues, developed by extension staff and reviewed by the QNRC Executive Committee, was distributed to the QNRC members. From this list each member was instructed to rank what he/she perceived to be the top three issues. This list was accompanied by a document that focused on each issue, identifying current regulatory actions of local, state and federal governments, and suggesting further local regulatory and nonregulatory opportunities for solving problems (policy options). The four top priority issues were:

1. Wastewater discharge into surface waters;
2. Watershed protection;
3. Air pollution, particularly the County's nonattainment status for ambient air quality standards for ozone; and
4. Groundwater pollution from operating and abandoned solid waste landfills.

Both in developing the comprehensive education program and in developing policy alternatives for local environmental issues, the implementation strategy we have relied on most heavily is intensive involvement of committee members to insure grass-roots development of the program. Throughout the policy development process, extension staff served as facilitators, not policy advocates. Local representatives made all the option choices.

Currently, deliberations for policy recommendations to County Commissioners have been completed for the first two issues. In-depth watershed protection recommendations were provided for the county's response to new state legislation. The QNRC studied and debated whether to take over the state's National Pollutant Discharge Elimination System (NPDES) permitting program but was unable to reach a decision. This issue may be addressed again later when additional information is available. Policy options to reduce air pollution in the county currently are under discussion.

Outcomes

The roles played by GPEP in the coalition effort emphasized: 1) generation of extensive technical information about the quality of

natural resources, existing federal, state and local policies, and policy alternatives (air, surface water, groundwater) and 2) promotion of process skills and principles, both in building coalitions and in planning and developing QNRC programs. This was especially important because of the number of people and interests represented on the QNRC, the complexities generated by focusing on issues beyond groundwater, and the recognition that QNRC programs would continue beyond the end of the pilot project.

The two coalition partners functioned as equals. To create local ownership of the program, much effort was expended to encourage individual QNRC member attendance and involvement in committee meetings, activities and decisions. All final decisions on goals, objectives, priorities, etc. were made by the QNRC and its committees. Extension served as facilitator for this model by helping with "process" and by providing information to assist QNRC members in their deliberations. In addition to creating local ownership of the program, this gave participants a feeling of empowerment because of their increased understanding of issues and alternative solutions; their playing an increasingly important role in helping County Commissioners make environmental decisions; and their successfully meeting their responsibilities outlined by the Board of County Commissioners.

As reported by coalition members, the pilot project produced increased knowledge, improvement in coalition-building skills, feelings of empowerment, increased willingness to listen to divergent points of view, and many other benefits too numerous to list here. Certainly, in the Gaston County pilot effort, it must be recognized that involvement of a large number of people and substantial resources beyond what GPEP alone could command had a major impact upon the success of the project. However, in areas having a definite policy dimension, such as improvements in the policymaking process, increased recognition of the value of coalition building, appreciation of broader perspectives and other related outcomes resulted from increased emphasis on the principles of public policy education. These can be attributed to the Groundwater Policy Education Project.

Although overall progress was slowed down because of the breadth of the project and the extensive efforts made to create local ownership of the program, a solid base has been established. Perhaps the prime measure of success is that QNRC members have developed the confidence, experience and skills to work almost completely through the public policy process on their own to analyze new issues and problems.

Lessons Learned

1. Public policy education as a methodology will be unfamiliar to most other coalition members. At the outset it is essential to de-

fine clearly what is meant by "public policy education," what it tries to accomplish and what steps must be taken to implement the principles involved. The process must be clearly defined in terms of steps to be taken and participants must be kept informed of where they are in the policy process. It is important to constantly reiterate the process.

2. Scope can be a problem. There is a need to define the nature of the "product" that participants are going to develop. How broad or specific should policy recommendations be? Decisions such as these must be made early in the policy process.

3. Facilitator skills, patience and energy must be substantial to interact with participants with much greater frequency and intensity than is required in cases in which local participants are not making all the decisions. Participants at first will have a very narrow perspective and will think they know all the answers. Part way through the public policy education process, as they acquire more expertise on the issue, they will view the issue from a much broader perspective but may be totally confused about what should be done. The job of the facilitator will be to keep group members on track, and keep them coming to the meetings so that eventually they will be able to focus more narrowly again but will be more informed about the issue, policy options and consequences.

4. Using the public policy education process greatly slows down the process of decision making and requires that attention be given to methods for keeping participants interested and involved.

5. It is essential to have a leader possessing the skills and temperament to share responsibility, thus leading to empowerment of participants, rather than one who wants to call all the shots personally.

6. Coalitions are a viable approach to public policy education, especially when dealing with nontraditional issues and audiences. All stakeholders must be involved.

7. Process is of equal importance to content. Participants taught the process of public policy education eventually will be able to analyze issues on their own without heavy reliance upon a facilitator. Total focus upon content means the facilitator will always be needed.

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EMERGING RURAL FARM-NONFARM CONFLICTS: WHOSE PREFERENCES COUNT?

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Conflict over property rights is certainly not a new topic. Conflicts arise because individuals or groups expressing different preferences claim rights to the same good, whether that good be an acre of land or a cubic foot of air. The agricultural sector, once the basis for the dominant lifestyle in the United States, has more recently clashed with suburban interests over issues of appropriate rural resource use. When the policy process fails to address the underlying sources of conflict, the question of whose preferences count may be answered in a nonparticipatory setting that fails to resolve the issue.

Using their assigned police power, local governments have promulgated rules through the adoption of zoning ordinances regulating land use in an attempt to manage community growth and minimize conflict related to the use of property.

The environmental movement championed the expansion of property rights for society to include the rights to clean air and clean water, and for citizens to live in communities free from hazards that degrade the environment. The passage of federal environmental legislation such as the Solid Waste Disposal Act (1965, 1970), the Federal Water Pollution Control Act (1972), the Safe Drinking Water Act (1974) and the National Environmental Policy Act (1969), along with similar legislation adopted by states, either exempted much of agriculture or limited regulation to specific types of agriculture.

Guidance for treatment of rural farm-nonfarm conflicts has historically come from court decisions, though in the last twenty years, the changing rural landscape has driven these problems into the state and local legislative realms.

The Suburbanization of the Rural Landscape

The suburbanization of the United States, spawned by the post World War II housing boom, accelerated the movement for adoption of comprehensive planning and zoning measures aimed at regulating the use of a community's stock of land resources. The publicly

adopted rules were viewed as policy instruments to be used to insure orderly growth and to minimize potential incompatibility of land uses. Rural governments were reluctant to adopt comprehensive land use planning and zoning in part due to the opposition expressed by agricultural producers. Land use planning was often viewed as a restraint or infringement on private property rights and a limitation of the perceived inherent right to the capitalization of land value.

Property rights conflicts and debate over whose preferences counted were exacerbated as residential development—driven by an increasing demand for rural housing sites by those seeking the serenity of the rural landscape—encroached into agricultural areas. In addition, rural housing site demand resulted in escalating farm property tax assessments, the adoption of rural land use planning ordinances and an attempt by some states to regulate agriculture under previously adopted environmental protection laws.

The changing rural landscape brought about by residential development also resulted in a change in the composition of rural town legislative boards. Rural townships and town boards, once dominated by officials drawn from the agricultural sector, experienced the emergence of leaders who were not agricultural landowners and thus viewed land use planning from a different perspective. The rural nonfarm official looked at zoning as an enforcement tool to be applied to all sectors of the community, including agriculture. Rural zoning was seen by many (but often not by agricultural producers) as a policy tool to protect agriculture, but may have aggravated conflict situations. Increasing numbers of nuisance complaints and lawsuits brought by rural nonfarm residents against agricultural producers were filed, often in response to perceived insensitivity by agricultural producers to quality-of-life preferences of rural nonfarm residents.

Frequent granting of zoning variances for the construction of rural nonfarm housing by local officials often destroyed the integrity of zoning ordinances aimed at protecting agricultural regions. Increased demand for rural housing sites, growing concern for the environment and expansion of intensive livestock operations into areas of higher population density accelerated the pressure for stricter control of farming operations through state legislation and further application of local government police power. The trend toward suburbanization insures that these preferences will continue to be expressed, and, where voting power shifts toward suburbanites, to be counted.

Agricultural Community Response

In response to the attempt by local governments to more closely regulate agricultural land use and operations, the agricultural com-

munity turned to state legislatures, seeking both relief and an affirmation of property rights. By 1985, thirty-two states had adopted *right-to-farm laws*, thirty-four states had initiated *property tax relief or preferential assessment programs*, thirty-four states had enabled, through legislation, *purchase of development rights programs and corresponding tax credits*, nine states had passed *agricultural districting legislation*, four states had provided for *exclusive agricultural zoning*, and eight states had succeeded in soliciting a *Governor's Executive Order*, a policy statement declaring the importance for agricultural land preservation, but without attached policy prescriptions (NASDA Research Foundation Farmland Project, p. 13).

Since 1985, all but one state have passed some form of *right-to-farm* legislation (Hamilton and Bolte). These laws were in direct response to the increasing frequency of nuisance suits being filed against farmers and ranchers covering a wide range of complaints about odor, dust, machinery noise, flies, facilities construction and chemical drift that may arise in the normal course of agricultural activities. Right-to-farm laws reduce the probability that a plaintiff will win a nuisance suit against an agricultural producer conducting reasonable and necessary farming activities. Right-to-farm laws explicitly recognize producers' property rights, and extend protection to their preferences for land uses, provided the uses are consistent with "generally accepted agricultural practices." Land grant universities often have been called upon to define the generally accepted agricultural practices for use in legislation.

The adoption of right-to-farm laws has not always deterred nuisance lawsuits, nor conflict over differing preferences for land use, in part due to the interpretive nature of the terms "generally accepted agricultural practices" and "traditional farm," another phrase used in some right-to-farm laws.

Additionally, the lack of explicit preemption in regulations creates confusion over which level of government is responsible for the oversight of agricultural operations. For example, in Michigan, both the state Department of Agriculture and the Department of Natural Resources assume a role in determining the outcome of nuisance complaints against farmers. The state exempts agricultural operations from liability under several state environmental laws, provided the generally accepted agricultural practices are followed. However, if the operation meets certain criteria under the Federal Clean Water Act or Clean Air Act, it may be required to obtain permits from U.S. agencies, and is subject to criminal prosecution if in violation of these standards.

Local governments, dissatisfied with state and federal responses affirming farmers' property rights and land use preferences, have enacted their own regulations governing agriculture.

Local Government Policy Response

In Michigan, local governments, using zoning ordinances, have altered the property rights assignments made by the state government and more heavily weight preferences of rural nonfarm residents. Local regulations initially were aimed at controlling activities on, and in some cases discouraging expansion of, intensive livestock operations (ILOs). ILOs are concentrated animal feeding operations deemed to be "intensive" once the number of animal units on the site reaches a given threshold. Animal units were first defined in the 1972 Federal Water Pollution Control Act and reiterated in the more recent Federal Clean Water Act (FCWA) (Jacobs) and are used to establish limits for animal densities that protect surface water from manure runoff. Under the FCWA, an animal feeding operation containing 1,000 animal units (wherein, for example, an animal unit is equivalent to a 1,000-pound steer, 2.5 swine heavier than 55 pounds, or 100 chickens) is required to apply for and receive an operation permit for water discharge. A 300-animal unit limit is in effect in operations in which the discharge passes through an engineered ditch or in which surface water flows through the livestock facility.

In Michigan, some local townships have incorporated the concept of animal units into zoning ordinances in an attempt to define the operation as an industrial facility, thus justifying treatment as a special exception use subject to permitting. From the local government's standpoint, existing agricultural zoning and permitted uses were established for "traditional" farms, not highly concentrated industries that generate significant negative externalities.

The ordinances adopted thus far in Michigan have established threshold levels for animal units in the range of the strictest limits in the FCWA, generally between 300 and 500 animal units. Several ordinances adopted by Michigan townships contain features such as setback limits from neighboring nonfarm residences, consideration of wells and roads during animal manure and chemical application, requirements for homeowner notification prior to application, and limits on times during the day and week for operation of farm machinery within designated distances of residences. These ordinances acknowledge nonfarm residents' preferences and property rights, while virtually ignoring those of farmers.

Judicial Response

In a nuisance suit, courts are charged with determining the weighting of property rights and the determination of the direct and indirect effects of the activity in dispute. The plaintiff must demonstrate property interest in the land on which the nuisance occurred, impaired enjoyment of that interest and actions by the defendant that caused the harm (Keene). Once these conditions are met, the court must determine whether the impact is unreasonable. Right-to-

farm laws are designed to eliminate a finding of unreasonable impact, because they designate particular farm activities and, by association, their externalities, as generally accepted.

For protection under right-to-farm laws, most states require operation of the farm that predates changes in neighboring land uses that cause a nuisance to occur. This is consistent with the doctrine of prior use, which stipulates that the first use of the land is the preemptory use. In other words, whoever was there first gains the property rights, within the bounds of legal restrictions. When the farm was there first, courts have tended not to award nuisance damages to neighbors who moved in later. The same would apply to residences that predated farming operations.

A difficulty arises in the case of expansion of existing farms, since many right-to-farm laws are vague on whether farms must continue to operate as they did before residential development took place in order to qualify for legal protection. In three states in which rural residential uses predated farm expansion decisions have designated feedlots as nuisances (Hamilton and Bolte). On the other hand, a cattle feedlot operator in Idaho was successful in arguing that the social benefits of the operation outweighed the negative externalities of expansion, even though neighboring residential use predated the expansion (Hamilton and Bolte).

Courts have not yet tested the constitutionality of the Michigan Right-to-Farm Law. However, state preemption over local ordinances was upheld on the basis that the law was created to protect farms threatened by alleged violations of local zoning ordinances and regulations as well as threat of private nuisance lawsuits (Maturen). In other words, local governments may not threaten the viability of farms by passing ordinances against their generally accepted practices.

Zoning variances granted by local governments for construction of residences in areas zoned for agriculture were a driving force in the escalation of nuisance suits and formal complaints brought against agricultural operations. Rural nonfarm residents, seeking the peace and tranquility of a rural area, were surprised by the odors, dust, noise, and other negative features of normal farming operations. These individuals pressured local governments to develop ordinances to limit their exposure to the nuisances by restricting the activities causing the nuisances. Through the sharing process between local governments, ordinances aimed at reducing or minimizing exposure to the nuisances have proliferated in a preemptive way, expanding into areas that are just beginning to experience suburbanization. Meanwhile, farmers feel their property rights are being violated and their preferences ignored, and they continue to exert pressure at the state level for protection from nuisance suits and local interference in onfarm activities.

Public Policy Education Opportunities

Land grant universities and the Cooperative Extension Service historically have assumed educational roles related to land use planning. The existing and emerging conflict over whose preferences count in rural land use decisions presents an opportunity for public policy education. Unfortunately, in situations such as previously described, attention is not usually paid to the problem until a complaint is lodged or a lawsuit filed. By that time, both sides in the conflict have usually drawn their battle lines, and may be unwilling to enter the policy discussion. We advocate seizing on the "teachable moment" to educate farmers and nonfarmers of their rights and responsibilities before conflict begins. We suggest this may be done through interaction with concerned individuals and with public policy officials.

The first step in education is recognizing that the potential for a problem exists. Try to experience the farm through the nose, eyes and ears of a person unfamiliar with normal farm operations. If such a person would consider a particular farm to be a nuisance as a neighbor using current practices or if it expanded, then chances are, someone will complain about the farm. If the nuisance can be abated by changes in farming practices that are consistent with generally accepted agricultural practices, then the farmer should be made aware of the alternative practices. If a potential neighbor is unfamiliar with how a farm works, education through local entities (realtors, chambers of commerce, even the farmer) may produce a more positive viewpoint of the farm, and reduce the shock of experiencing the externalities associated with production. Activities of nonfarmers that may create conflict should also be recognized and addressed with education. For example, unfamiliarity with farm operations may lead nonfarmers to drive at excessive speeds around farms or to generate noise or activity levels that stress livestock.

If education alone will not resolve the conflict, it may be desirable to act as a facilitator to help involved parties educate themselves. In this role, it is important first to identify those who are claiming property rights that conflict. It may be more inclusive to identify the property rights first, then consider who might be claiming the rights. For example, if odors from a farm cause a neighbor to cancel an outdoor activity, the conflict over claims of the right to operate the farm and the right to enjoy the nonfarm property may be more pervasive than the case at hand. The rights may be claimed by two groups (farmers and nonfarmers), rather than simply two individuals.

The second step in facilitative education is to solicit the perceptions of the problem from the concerned individuals. Environmental annoyances have both cognitive and emotional components, and perceptions of an annoyance may be affected by input from more than one sense (Craik). For example, if a nuisance source both appears unclean and is associated with an unpleasant odor, the two

sensory images may intensify the degree of the negative response. A perception of an unpleasant odor may be correlated with a belief that the source of the odor creates an unhealthy environment, even when no objective measure of health effects exists (Cavalini, et al.). In other words, for the affected individuals, perception is reality. An affected individual either adapts to or alters the situation creating the nuisance, depending on the nature, intensity and duration of the annoyance (Campbell). Filing a complaint about a farm is a form of action to change the context of the problem. By introducing new information that addresses the particular views expressed, an extension educator may encourage reevaluation of negative perceptions.

A third step in this process is to clarify the desired outcomes of each party. With nuisance issues, emotional responses to the perceived problem are fairly common. For example, a nonfarmer may talk about wanting guarantees of clean water when what is really desired is the elimination of odors from the neighboring livestock facility. The nonfarmer may see clean water as a more legitimate or more compelling basis for complaint about the way the farm is operated than is odor. Framing desired outcomes to emphasize common goals between concerned parties encourages cooperative problem solving.

Sometimes the most important service an extension educator can offer is the validation that the problem is being heard and understood. When all parties feel their views are comprehended and recognized as valid, a solution is more likely to emerge. If the problem can be stripped of pejorative statements and emotionalism, it is possible to attack the issue rather than the individuals involved. Establishing and maintaining a group perception that the extension educator is a neutral and credible facilitator may be critical to successfully presenting outcomes as mutually beneficial.

Since nuisances arise from conflicting property rights, the assignment of those rights must be addressed. At this point, the question of whose preferences count becomes important. Regulation of agricultural operations may mean financial hardship for the farmer and for all agricultural producers in the jurisdiction of the regulating body. On the other hand, failure to act may result in a loss of value to homes and businesses affected by the nuisance. The groups who gain and lose should be given the opportunity to express the advantages and disadvantages they see in proposed actions. Not only do the farmer and neighbor have to be considered, but also the community members who derive other benefits and costs from the existing situation.

One way to begin this process is to consider the logical results of desired outcomes previously expressed. For example, eliminating all odor from a livestock farm may require closing it down. There may be implications for input suppliers; local citizens who value the farm as a resource for teaching, for wildlife habitat or for flood control;

and local citizens who endure traffic congestion from farm machinery or object to animal treatment. Even qualitative determinations of the net social value (the benefits less the costs) of a nuisance generator can help guide the solution process.

Proposed regulations should be subjected to several criteria. The first criterion is *redundancy*: does the regulation duplicate an existing protection? There is no value in enacting a zoning ordinance that uses environmental protection as a standard when state and federal laws are adequate to address the problem. The second criterion is *reasonableness*: does the regulation consider difficulty and expense of compliance? Unintended business hardships may result from mandating particular actions to reduce or eliminate a nuisance. The third criterion is *effectiveness*: is the regulation a long-term solution and does it target the problem? Zoning ordinances directed toward a particular operation or class of operations may fail in the long run to protect against nuisances from similar sources, or may become outdated by changes in technology or preemptive state and federal legislation. The last criterion is *balance*: does the regulation take account of gains and losses and which groups are affected? Local regulations should not disadvantage large groups of people for the benefit of a few individuals in the community.

Public policy educators may play a role in assisting local officials to determine whose preferences count in rural farm- nonfarm conflicts. In those cases in which property rights force a choice that disadvantages one group, the decision should be reached by weighing all the benefits and costs of potential solutions.

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WETLANDS AND ENDANGERED SPECIES: EDUCATIONAL ASSISTANCE NEEDS OF EXTENSION EDUCATORS

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Our nationwide survey of U.S. extension educators revealed their expectations and needs for the public policy issues of wetlands and endangered species. Wetlands and endangered species issues will continue to be "hot" topics during the next two to three years evolving around financial and legal aspects and basic values such as property rights. Extension educators expect to be involved in wetlands and endangered species issues, and the survey revealed a high level of demand for assistance.

The Survey

In July, 1992, survey forms were mailed to 1,192 extension educators to ascertain their expectations about wetlands and endangered species issues and their needs to conduct effective programs in their areas. The survey was sent with a letter from Extension Service administrators John Vance and Vivan Jennings to Agricultural and Natural Resource (ANR) specialists and to ANR program leaders who in turn solicited responses from four agents in each state. The survey asked whether or not wetlands and endangered species issues were going to be "hot" in the next two to three years, whether or not they expected to be involved, and what kind of materials and programs they would need.

With 47 percent of the 558 surveyed responding, the response rate was high, especially given no mail or phone follow-up, and the letters and comments indicated a high level of interest.

The Respondents

The response appeared representative of U.S. extension educators likely to work with wetlands and/or endangered species issues. All regions of the U.S. were well-represented in the survey although 30 percent of the respondents work in the South and 29 percent in the West. Of every ten respondents, six were specialists, three were agents, and one was an administrator. Most work with both natural resources and agriculture.

Anticipating the Issues

The question was asked: How hot (controversial) will wetlands or endangered species issues be in your county/state in the next two to three years? Mean responses are in bold.

	Cold	←	Warm	→	Hot
Wetlands definition/regulations	1	2	**3**	4	5
Swampbuster program	1	2	**3**	4	5
Property rights in wetlands	1	2	**3**	4	5
Public purchases of wetlands	1	2	**3**	4	5
Private purchases of wetlands	1	2	**3**	4	5
Chemicals and endangered species	1	2	**3**	4	5
Development and endangered species	1	2	**3**	4	5
Property rights and endangered species	1	2	**3**	4	5

All categories received a mean response of 3 or 4 out of a possible 5, with standard deviations ranging from .87 to 1.23. The arguments over defining wetlands for regulatory purposes will continue. Financial and legal consequences are expected to propel these issues as are basic values such as property rights, and the conflicting values of affected interest groups.

Controversy Focus

What commercial or public activities are likely to spawn these issues? For example, where are they most likely to pop up? Here are the responses and the frequency with which each was listed: Agriculture—81%, Water—67%, Forests—49%, Residential Development—39%, Commercial Development—33%, Recreational Development—30%, Highways and Roads - 16%, Mining—14%, and Other—10%.

The Other category included: private use of public range and forest lands, development, oil and gas exploration, fisheries and aquaculture, regulation and takings, bio-diversity, floods, skiing, gravel extraction, pesticide use and control, and relationships with Native Americans.

Regional comparisons of these data provide more clues as to which activities are likely to be associated with wetlands and/or endangered species issues. Each column shows the percent of responses. In the North Central region, issues are expected to be associated with agriculture and water. In the South, add forestry, residential and commercial development to that list.

In the Northeast, development, agriculture and water are the likely sources. In the West, extension educators will be sensitive to agriculture, water, and forest management; also to mining, public lands,

rivers and hydro power, and range management. However, the regional data reveal more national homogeneity than regional differences.

Focus	Regional Responses %			
	NC	NE	S	W
Agriculture	34%	19%	22%	23%
Water	23	17	19	20
Forests	7	10	19	17
Residential Development	9	19	12	9
Commercial Development	9	12	11	7
Recreational Development	9	10	8	9
Highways and Roads	5	7	5	3
Mining	3	3	2	7
Other	1	3	2	5
	100%	100%	100%	100%

Probable Involvement

The survey asked: To what extent (on a scale of 1 - 5) do you think you will be involved in these issues? The mean answer is 3.65 and the standard deviation is 1.05.

Low----------High

1 2 3 4 5

Materials and Programs

To learn what kind of materials and/or programs would be most helpful, the survey asked: **What would help you?** Mean responses are highlighted.

	Low				High
Materials describing the issue(s)	1	2	3	4	5
Materials to teach how resource policy is made	1	2	3	4	5
Information on effects of policy alternatives	1	2	3	4	5
How to educate about resource policy issues	1	2	3	4	5
Mediation/Negotiation program materials	1	2	3	4	5
Successful extension programs: case examples	1	2	3	4	5

The responses are 3 or 4 out of a possible 5, with standard deviations ranging from .99 to 1.23. The data give little guidance on priorities—all types are in demand.

Media

What forms should these materials/programs take? Fact sheets were checked on 79% of the responses; 44% and 42% wanted newsletters and videos; 35% wanted a regional training seminar; 19% preferred a short course or school; 34% wanted booklets; and 26% wanted handbooks.

The preferences are so similar among the regions that they suggest that the same media and programs can be used nationwide with regional and/or topical adaptations.

Media	Regional Responses			
	NC	NE	S	W
Booklets	12%	11%	12%	11%
Fact Sheets	29	30	26	25
Handbook	10	10	8	9
Ag*Sat program	4	2	3	4
Video	12	13	18	13
Short Course/School	6	6	4	9
Regional Training Seminar	11	11	12	13
Newsletter	15	16	16	13
Other	1	1	1	3
	100%	100%	100%	100%

Conclusions

Two conclusions are obvious. First, U. S. extension agents, specialists and administrators expect to be involved in wetlands and endangered species issues. Second, they want assistance from the extension system. They want to be well informed, and they want to know how to work with these issues.

The data reveal more national homogeneity than regional differences. Respondents in all regions identified basically the same issues, focuses of controversy, probability of their future involvement, and materials and programs needed to deal with wetlands and endangered species. While this provides guidance for Extension Service program development, it is also apparent that regional differences, such as the endangered salmon and spotted owl issues in the West, will require specific attention.

The results of this study indicate a need for materials and programs which will help agents, specialists and administrators to effectively handle wetlands and endangered species issues. Fact sheets, newsletters and videos, the preferred media identified by the respondents, should be produced as the most easily disseminated forms of information. And regional training seminars should be conducted to allow not only national issues to be discussed and analyzed, but regional issues as well. The "teachable moment" has arrived for many wetlands and endangered species issues.

RESOURCE ISSUES AND OPTIONS—RIO: A COORDINATED APPROACH TO EDUCATION ON NATURAL RESOURCE ISSUES

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Nowhere has the endangered species issue been more contentious and vivid than in the state of Oregon. The listing of the northern spotted owl as a threatened species has resulted in reductions in timber harvests from public lands; job losses; promulgation of forest practices restrictions on private lands; and lingering uncertainty about the investment potential of Oregon's public and private timber growing lands. These consequences have spun out of a cyclone of interest group activity in the media, the state legislature and in Congress, with much left to be resolved.

The impression left with the general public is that the "facts" brandished by various interest groups are hopelessly conflicting and that there is simply no common or middle ground on this issue. It adds to the notion that our institutions have failed us again. Since endangered species is not a life-and-death issue for most people, in the midst of such confusion they simply turn it off and relegate it to "spectator sport" status without ever digging further to establish better-informed judgment.

Future acts of the endangered species drama could be played out with the marbled murrelet, a shore bird that nests in old growth forests along the coast, and the many stocks of salmon in coastal streams, the Columbia River and its tributaries. Listing of these anadromous fish would have great impacts on agriculture, forestry, domestic water uses, water-borne trade and electrical power. These consequences would reach far beyond the rural communities associated with the spotted owl. How will the publics affected by the options for dealing with salmon protection and recovery learn about those options and understand the consequences? Hopefully, the university can do better than we have in the past.

Approach

The Forestry Extension Program at Oregon State University's College of Forestry launched a prototype educational effort to help people work through resource issues. Oregon State University has one of the strongest technical forestry extension programs in the country, with twelve full-time forestry field agents and eight extension specialists in such areas as silviculture, wood processing, business management, marketing, harvesting, watershed management and wildlife. This group has a record of organizing to successfully attack a central challenge usually involving forest landowner education (Adams and Garland). The challenge here was to marshall these abilities toward public issues education.

Involvement of the College of Forestry in issues was traditionally piecemeal and reactive. Sporadic requests from political decision-makers and interest groups to the dean's office or to individual faculty members often led to supplying technical information or assigning faculty members to conduct policy analysis for executive and legislative units. There was no concerted outreach effort to educate the public on issues that generate policy options although it was clearly within the mission of the land grant university. Our dean recognized the opportunity to develop such a program when he began his administration in 1989, wanting to make the College of Forestry a center for intellectual debate and learning about the forestry issues.

It is important to recognize that the endangered species issue, as big as it seems, is actually part of the larger complex of issues concerning the uses and protection of forest ecosystems. Profound changes are occurring in the way an increasingly urban/suburban public views the forest. Aesthetic qualities and nontimber resources have become highly demanded outputs of the forest. Our traditional forestry practices seem to increasingly clash with these amenity values of the forest.

Addressing the endangered species issue directly would have concentrated on only a symptom of the root issues. Most of the issues that are determining the future of forestry are really variations of the forest ecosystem protection theme: endangered species, riparian area management, wetlands protection, and forest harvesting and management practices. There had already been so much attention to the spotted owl controversy that an outreach effort, even from the university, probably would have been mistaken by many as another interest group hype. The College of Forestry was already viewed by many as pro-logging, an unfortunate preconception that stems from decades of research and technology transfer in the intensification of forest production. We had lots of work to do in building a new image from which to do issue education.

We wanted to build a program that would fulfill four purposes:

1. Encourage more citizens to get involved in forestry issues.

2. Develop more effective methods for helping people understand the issues and options.
3. Provide more access to relevant research-based information in ongoing debates.
4. Change the role of the forestry extension program with the citizenry and the College of Forestry and broaden its base of support for this new role.

The RIO Program

We named the new program Resource Issues and Options (RIO). We did not use the word "policy" in the title. Importantly, we did not want to infer that public policy is the only avenue for solving problems. We wanted participants to also explore dispute-resolution and citizen action alternatives. Second, the term "policy" has been a "turn off" for many potential participants and extension faculty. Too much of the public feel that policy is made only by politicians and behind-the-scenes experts. They do not feel they have access to the political process and strongly distrust those who do. We wanted to encourage people to get involved in the early stages of issues so they could help define the problems to be solved and understand the issues' various implications before information became polarized and focused on the merits and demerits of policy proposals.

Issue Team Approach

We organized RIO into three teams, each addressing a different root issue: forest health, forest practices, and community futures. Each team consists of six to twelve forestry extension agents, specialists and research/teaching faculty from disciplines applicable to the general problem area. These educators design programs to interpret these issues to various audiences. Each core team calls on an advisory group of scientists, resource managers, decision makers and interest group representatives for review of program goals and educational materials.

The *Forest Health* team is developing a brochure, video and series of discussion and debate sessions to address public issues about the current insect and disease epidemic in the forests of eastern Oregon. Many strategies for dealing with this problem involve manipulation of the forest in some way: cutting, burning and spraying, all of which are opposed by some interest groups.

The *Forest Practices* team has developed a public symposia series about the scientific and social basis for issues in regulation of forest practices on private land in Oregon. They have focused initially on proposed guidelines for stream protection, using symposia to get landowners, regulatory agency representatives, and faculty members together to identify tradeoffs between protection standards and

their implications for forestry operations and investment values. This team has also developed a faculty seminar program to explore issues concerning the involvement of science and scientists in the policy formation process using stream protection as a carrier issue.

The *Community Futures* team is developing a pilot project for community leaders in two counties that are struggling through economic and social transitions brought on by harvest reductions on public forest land; intensified cutting of intermixed private lands; and structural changes in the forest industry. Their theme is longer-term redevelopment goals tied to the options for forest resource management and utilization. The team brings technical and policy specialists from the university and agencies to work with business and community leaders to identify policies that capitalize on opportunities for environmentally sound economic development.

Steering Committee Functions

Supporting the RIO issue teams is a small steering committee formed to handle strategic planning, evaluation and coordination as well as special issue education projects. This group consists of one member from each of the issue education teams plus the forestry extension program leader and a designated leader of the RIO project. This latter individual serves as an administrator for the RIO effort and as a consultant in training issue teams in policy education techniques and helping teams design projects and document and evaluate their programs. Although this could be a full-time job, we settle for .25 full time equivalent (FTE) from the forestry programs marketing specialist who has taken a special interest in policy education.

The RIO steering committee has several responsibilities:

1. Work with the dean and the College of Forestry administrative team to explain evolving program structure, monitor hot topics and encourage support and recognition of faculty involvement by academic department heads.
2. Review and approve RIO issue papers and educational materials.
3. Liaison with the Agricultural Communications Department to assure timely delivery of materials.
4. Search for sources of outside funding for RIO efforts and help issue teams apply for these funds.
5. Produce special publications that support the general issue education efforts. Recent examples include a directory of environmental, industry and other interest groups for general circulation to citizens seeking more information and involvement; and a brochure designed to assist new participants in public policy education to frame appropriate questions.

6. Organize training and professional development opportunities for extension and academic faculty in issue education concepts and methods.

Each of the RIO teams operates independently, reporting its progress twice annually to the rest of the forestry extension group. Each team has embarked on a different approach to issue education, governed by the personality and talent mix of the team members and the nature of the issue. Members have worked together before and draw on successful experiences in group projects for forest landowner education. Each team develops four-year plans of work around their issue and members integrate their part into specific FTE commitments and annual plans of work that are part of the performance evaluation process. Because agents and specialists are housed in disparate counties and academic departments it is important that the purposes and objectives of the RIO project be communicated to their chair agents and department heads.

Keys to Success in Resource Policy Education

Process Skills

All the forestry extension people have been trained in meetings management and facilitation skills. They have refined those skills in various group projects and special sessions before the RIO project was developed. Several individuals had been involved in what we now call issue education and had been instrumental in forming local chapters of the Oregon Small Woodland Owners Association, a politically active group supporting the interests for forest landowners. So our extension people were not ignorant of politics and the political process, but, up until the RIO project, they did not see issues and the political side of forestry as a subject for viable educational effort or worthy of significant commitments of time. It was a new endeavor with new audiences. Issue education at first did not seem to have a concrete body of concepts or techniques to serve as guideposts in designing programs.

Breaking the inertia was aided by the policy education material in the *Working with Our Publics* training package. The material was adapted to forestry examples and issues and delivered to the RIO teams in initial training. This was supplemented with an audiotape and an example issue paper and educational session on the log export issue to demonstrate some of the policy education techniques.

Team members developed the "facts, myths, values" and the "alternatives/consequences" models into exercises specific to their own issues. The "Kings and Kingmakers" and "Power Cluster" models were most useful in helping foresters articulate what they had been witnessing in the political environment and making it less frightening and more tractable. RIO teams have developed their own list of criteria for selecting issues and a complete set of planning

worksheets for analyzing the issue and designing an educational intervention.

Systemic Ownership

The RIO project is now one and one-half years old. It has enjoyed some successes and is slowly gaining the credibility it needs to propel larger-scale and more effective efforts. We are still borrowing time and talent from ongoing technology transfer programs that have established clientele. We do not have a policy education specialist; a full-time person could increase our activity level but might be tempted to assume too much of the work load at this early stage of the program. Our purpose was to help make public issues education and the requisite skills a part of each extension foresters professional repertoire regardless of his/her specialty or geographic area. We hoped the enthusiasm and experience gained would help to integrate a public issues component into individual educational tasks.

Administrative Support

Administrative support through dedicating resources to start-up costs is helpful. Initial investments are often needed in staff development, materials and operational support, especially to field Extension faculty with limited funds for out-of-county work. An additional costly element could involve compensation for FTE contributions from needed non-extension faculty. Administration can also send a powerful signal that this type of process-oriented work is recognized as a legitimate scholastic endeavor through encouragement, recognition and rewards.

Future Challenges

At this point the project continues to face three challenges. The first has been to educate non-extension faculty and enlist their support in this coordinated approach to policy involvement. Although we have presented RIO as a college-wide effort and have received good support from the dean in this concept, the commonly encountered barriers to effective interdisciplinary work are alive and lurking in the reward systems, disciplines and the attitudes of individual faculty members.

The second challenge is evident within the extension issue teams. Public issues education is a new role for people whose successes have been in technology transfer. They find pride in masterfully applying technical material to helping clients solve problems, develop skills or adopt new practices. The world of issue education is colder and more confusing: new audiences, new systems and being responsible for activities in which people can hear things they do not necessarily agree with from other people with very different value systems.

The third challenge has been in dealing with programs that are already being conducted by agencies, interest groups and even other College of Forestry departments. Many of these programs address the issues we selected, some more directly than others. We are becoming aware of how strongly experts and organizations claim ownership on issues.

Agencies in particular use issues to generate new programs and do not look kindly on interfering educators. Interest groups likewise do not want an issue education program that succeeds in opening up citizens to a full range of information, perspectives and debate. Some look on issue education as unwarranted intervention in the markets for information and ideas. What this has meant for the RIO project is the need to include these groups wherever possible without being dissuaded or swayed by them. We are confident that a steady hand on the tiller toward clearly defined educational objectives will win over some of our initial detractors. We have been thankful for the support of the dean and other administrators when its been needed the most.

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PUBLIC POLICY EDUCATION FOR WETLANDS ISSUES

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As the Cooperative Extension Marine Advisor for San Diego County, California, I have used techniques of public policy education, the National Issues Forum and mediation in educating about wetlands issues.

Public Policy Education

The steps of the model, "Ladder for Policy" (Wallace, et al.), lead from perceiving and defining a problem through developing goals and implementation strategies to arrive at a policy for solving it. The public policy educator or team convenes a group representing different perspectives on the problem. They work through a process that includes: selecting a topic; defining the situation, concerns and issues; generating and choosing among possible goals; generating alternatives for achieving the selected goal by examining the consequences of each alternative using objective criteria· selecting an alternative; developing strategies for implementing it; and evaluating the effectiveness of the process, the resulting policy and future actions.

The ladder requires participants to reject some possibilities and focus on a choice at each decision point. Parts of the ladder can be repeated for complex problems requiring multiple goals, alternatives and strategies. As the process develops, participants will be able to decide how many elements should be incorporated in the final policy.

A key element in the success of the process is that generating and evaluating alternatives based on their consequences and objective criteria allow participants to determine the values attached to the problem. They are then able to make choices based on a clear understanding of those values.

National Issues Forum

The goal of the National Issues Forum (NIF) is to stimulate and sustain public discussion on issues of national importance. Its popularity has resulted in projects that apply NIF methods to regional and local concerns, such as western water issues (Ford) and airport siting (San Diego Dialogue).

The NIF recognizes that citizens may not be well informed on the complexities of issues and develops books, summaries and videotapes to establish a common foundation of knowledge on each issue. These materials incorporate information from mass media, interviews with knowledgeable parties, relevant statistics, and citizen focus groups.

The information is used to develop a series of choices, supported by data and public concerns. For example, their issue book, *The Health Care Crisis* (Melville), presents three choices for resolving the problem: minor changes, radical overhaul and mandated coverage. Participants review the background materials and deliberate collectively on the choices with the aid of a trained moderator.

The NIF believes that "citizens need to grasp the underlying problem or dilemma, and they should understand certain basic facts and trends . . . .The most important thing to ponder and discuss is the kernel of convictions on which each alternative is based. The . . . National Issues Forums help people sort out conflicting principles and preferences, to find out where they agree and disagree and work toward common understandings" (Melville, p. 24).

Emphasis is placed on sorting out values and examining choices in a deliberative atmosphere. The NIF states, "the 'choice work' that takes place in Forum discussions involves weighing alternatives and considering the consequences of various courses of action . . . .Forum participants learn how to work through issues together . . . using talk to discover, not just to persuade or advocate" (Melville, p. 24).

The NIF believes, "citizens who have deliberated together are the best predictors—the best source of information—about what the public as a whole would accept as sound policy, and that the judgment reached by such citizens is, therefore, worth heeding for both political and policy reasoning . . . that citizens want a partnership with policy makers in deliberation concerning the choices open to the public" (Kinghorn, p. 49). NIF suggests methods for participants to communicate their concerns and conclusions to policymakers and others in the community.

Mediation

Mediation principles developed by the Harvard Negotiation Project include four basic points:

"People:	Separate the people from the problem.
Interests:	Focus on interests, not positions.
Options:	Generate a variety of possibilities before deciding what to do.
Criteria:	Insist that the result be based on some objective criteria" (Fisher and Ury, p. 11).

Separating the people from the problem involves identifying substantive (what one needs) interests or issues and relationship (how one wants to be treated) interests or issues. Dealing up front with relationship issues clears the deck for dealing with substantive issues. Both are influenced by perceptions and emotions that determine how people interpret what they see and hear. Negotiation can be stopped in its tracks if parties do not understand each other's points of view and feelings about the dispute. To facilitate the exchange of perspectives, parties are asked to employ techniques such as active listening, role reversal and summarizing to the other what he or she has said. The San Diego Mediation Center has developed a well-defined process using these techniques. They also emphasize obtaining agreement to a set of ground rules for maintaining a constructive atmosphere (Community Mediation Program, Fisher and Ury).

This method is often called "interest-based" negotiation, as opposed to "positional" negotiation. In positional negotiation parties start with a position, or suggested action, in the belief that it will promote their interests or needs. Problems arise when one party's position threatens the other's interests (Fisher and Ury). For example, an employee's request for a raise may pose a fiscal problem for the employer.

Interest-based negotiation begins by identifying and discussing each party's interests, needs and concerns. Parties then propose actions to satisfy their interests and objective criteria are developed to evaluate them. Negotiation proceeds to evaluate, modify and select a mutually-agreeable set of actions to resolve the dispute. Ideally, the agreement will be fair, balanced and SMART: Specific, Measurable, Achievable, Realistic, and include a Timetable to produce an enduring solution (Fisher and Ury, Community Mediation Program). In the above example, discovering why the raise is needed may help the employer meet the employee's need with a benefit or perquisite.

Comparison of the Methods

All three methods help participants to make choices by expressing, exchanging and clarifying the values they bring to making decisions on difficult issues. Public policy educators call this examining the consequences of alternatives, NIF calls it "choice work" and mediators call it focusing on interests. They all use group discussion with a neutral facilitator as the arena for deliberation. All employ factual information as a background for discussing values and making choices.

Public policy education is a comprehensive process for working through public issues and developing specific policy strategies to resolve them. It is a flexible process that has been used extensively for local, regional and national issues. NIF develops well-researched background materials, uses the materials to educate large numbers of people on public issues, and involves them in well-managed deliberation to develop an enlightened electorate. Communicating choices to

policymakers is recommended, but less developed than in public policy education. NIF processes can be used to strengthen earlier steps of a public policy education ladder. Mediation is a well-defined process for voluntary conflict resolution, drawing extensively on human relations skills. It has a strong track record in international negotiation, as well as smaller scale issues. Employing mediation's techniques and criteria for an enduring agreement can strengthen public policy education discussions, decisions and final policies.

Educating about Wetlands Issues

Public policy issues are complex and my role as an educator evolves over the course of involvement in a given wetlands issue. The three processes have been useful at various stages of involvement in an issue. Two projects, one regarding San Diego Bay water quality and the other regarding agriculture and nonpoint source pollution in coastal waters of San Diego County, have provided opportunities to employ these techniques.

The San Diego Bay project began with a request from the San Diego Interagency Water Quality Panel to help organize a seminar. Technical information on Bay water quality was scattered over many organizations and policy makers were having difficulty obtaining a comprehensive picture for decision making. The information was extensive and complex, a large number of individuals were interested in the issue of managing bay water quality, and there was a need for policymakers to receive summaries and to interact with technical experts and the public.

The panel decided to hold a symposium, which I chaired. Written, technical summaries were prepared, technical sessions were planned with invited speakers, knowledgeable participants and facilitators. On the first day of the symposium, participants in these sessions analyzed and revised the technical materials; deliberated on the issues of pollution sources and monitoring, human health risks, and cleanup of contaminated sediments; and produced a set of technically-based recommendations to policymakers.

On the second day of the symposium, technical recommendations were presented to policymakers who then responded with their opinions on priorities and how their government sector could help resolve some of the Bay's pollution problems. The audience of about 150 concerned citizens and scientists interacted with the policymakers and all completed an opinion survey on critical Bay pollution issues. Symposium findings were summarized in an extensive report (Johnson, et al.) that the panel sent to policymakers at all levels of government, concerned citizens and scientists.

The intensive research and discussion methods used in the symposium and report phases are much like those of the National Issues Forum. I have continued to participate as a panel member and have

used mediation techniques to help panel members deliberate and decide on the best means for implementing their recommendations. Overall, public policy education methods have provided a framework for guiding the group and I have received advice from members of the University of California Cooperative Extension Public Policy Education Workgroup.

Various organizations and agencies are developing ways to implement the recommendations of the symposium. For example, the Port and the Regional Water Quality Control Board considered a joint pollution monitoring effort and the Port of San Diego has targeted urban runoff for attention as a pollution source. A panel member is modeling some of my methods to help the county's committee on stormwater pollution management chart a course. A local environmental group submitted a nomination to the governor for San Diego Bay to be included in the National Estuary Program, which mandates development of a comprehensive conservation and management plan. The state is preparing the nomination for submission to the federal Environmental Protection Agency.

In 1992 the panel asked me to facilitate a workshop in response to a request from a state senator, who wished to submit reauthorizing legislation for the panel. The group agreed that the goal of reauthorizing the panel should be pursued. I used the "Ladder for Policy," leading the participants through alternatives for reauthorizing the panel, generating a list of consequences for the top five alternatives, and prioritizing the alternatives. The discussion generated by this process brought out underlying values, concerns and interests that had remained unspoken in previous meetings. Thus, panel members achieved a better understanding of each other's interests and could negotiate appropriate courses of action. The senator's staff participated in this workshop. I wrote up the results, including lists of alternatives and consequences and summarized highlights of the discussion. A bill is now before the legislature that incorporates many elements from the workshop. Unlike in the symposium, participants in the panel reauthorization workshop were well informed on the issues and had worked together for years. Therefore, the emphasis on background information was unnecessary and the public policy education and mediation methods were most valuable.

The agriculture and coastal nonpoint source pollution project began with a request from the U.S. Department of Agriculture to develop a pilot project to empower agricultural producers to reduce impacts on coastal estuaries (Johnson and Mellano). The nonpoint source pollution focus was chosen, because it was a developing issue and policies had not yet been fixed. My colleague, Dr. Valerie Mellano, [Agricultural] Environmental Issues Advisor, and I identified agricultural producers, government agencies and environmental groups as the primary concerned parties. We hired a graduate student in public health to interview members of the three groups to determine their

knowledge, concerns and likely action plans regarding the issue. We also hired an attorney to summarize the regulatory framework for the issue. Their work was developed into a set of extensive background materials for the issue. This reflects a National Issues Forum approach to educating citizens before convening them for deliberation.

We developed participation by decision makers for all three groups and held two forums in which we used the "Ladder for Policy" to generate and decide on goals and alternatives. Mediation techniques were used in development phases and in the forums to help people feel that their interests would be represented and during the forums to help establish a constructive atmosphere. Unlike the San Diego Interagency Water Quality Panel, this group was unused to working together, so progress was much slower. One alternative recommendation of the forums was for a steering committee, that is carrying on the decision process. Another alternative forum recommendation was to provide educational assistance to agricultural producers in developing best management practices for reducing nonpoint source pollution. Federal EPA staff participated in the project and encouraged us to apply for funding to implement an educational project. We have been advised this funding will be approved. We also received comments from the Regional Water Quality Control Board that this approach was much needed.

Conclusions

Public policy education, National Issues Forum and mediation methods can be employed effectively in educating about and resolving wetlands issues. The key factors are developing and presenting sound background information, examining values, building trust, and acting as a neutral facilitator for balanced and fair discussion leading to wise decisions. Familiarity with the techniques allows the educator to combine and adapt them for each situation.

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The Rural Social Infrastructure

REINVESTING IN THE SOCIAL INFRASTRUCTURE OF COMMUNITIES

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Even to the most casual observer of state and local finance, the current environment of fiscal stress is widespread. While states like California, Florida, Illinois, Michigan, Massachusetts and New York receive national press, all states have experienced varying degrees of financial difficulty. Only seven states escaped having to either make budget reductions or raise taxes or both in FY 1992 (Hinds).

According to the National League of Cities, 54 percent of American cities in 1992 anticipate that expenditures will exceed revenues requiring a draw down of fund equity to balance general operating budgets (Judson). For the third consecutive year, the country's fifty largest counties, in terms of general operating expenditures, experienced structural imbalance with current revenues less than total general fund expenditures and their average fund balance equaling but 2.2 percent of expenditures (Lamphere). In Michigan, based on reviewing twenty-four county financial reviews and trend analyses in the past eighteen months, 83 percent of the counties serviced were experiencing structural budget deficits—a condition in which total general fund expenditures exceed current general fund revenues (Harvey).

The response by states to the deteriorating financial condition and accumulated deficits has varied widely throughout the United States. Twelve states reduced budgets in FY 1992, eight states are proposing tax increases for FY 1992, and twenty-three states are anticipating both budget cuts and proposing tax increases in FY 1993 (Hinds). Budget saving strategies adopted by states have included unpaid furloughs for state employees, developing early retirement options, issuing permanent layoff notices, accelerating tax payments, modifying accounting techniques, delaying payments to local units, postponing capital improvement projects, privatizing services and issuing bonds to obtain revenue to balance budgets (Mattoon and Testa). Governors in states with strong unionization found it difficult to achieve layoff targets thus not achieving projected savings. Sagging revenues combined with political resistance to increase taxes, resulted in both states and sub-state units of government to bolster revenue yields by increasing user fees and service charges. Service charges traditionally have provided 8 to 12 percent of total general

fund revenue for local governments, by 1989 the revenue category accounted, on average, for 14.1 percent and is expected to continue to increase (Advisory Commission on Intergovernmental Relations).

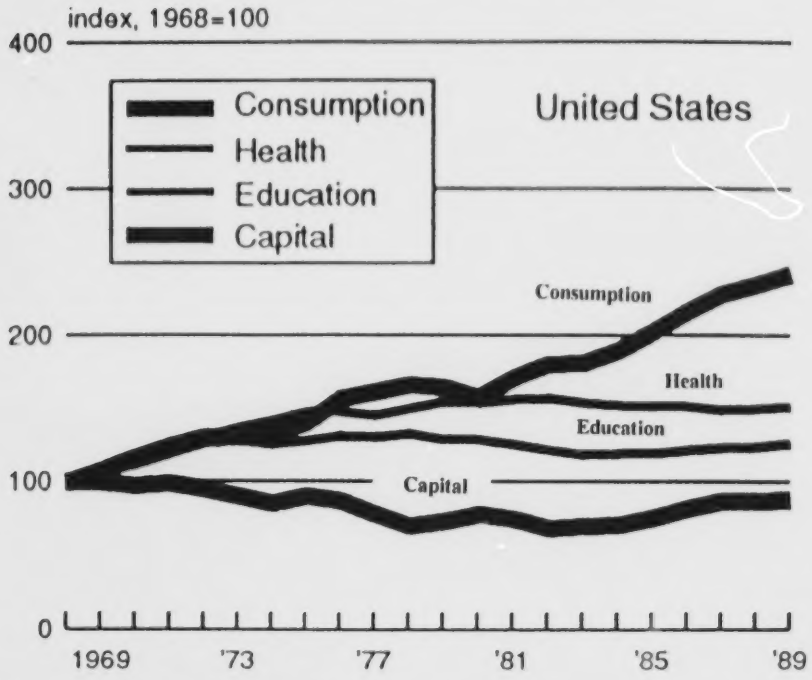
Human service programs such as public health, mental health, job training and social services are particularly vulnerable to recessionary cuts for several reasons. First, human service programs account for 20 to 30 percent of state budgets, thus have high budget exposure. For example, Medicaid costs per $100 of personal income, have more than doubled between 1976 and 1990 and are expected to rise by an additional 22 percent (National Conference of State Legislatures). Second, during a period of recession, expenditure demand increases. Third, the conservative political agenda of the 1980s and 1990s, which has become known as "fend for yourself federalism," targeted public assistance and transfers reductions as a foremost agenda item. Tight state budgets, following the federal government's lead, have passed along federal aid reductions to local governments resulting in structural budget adjustments related to human service programs at the local level.

The recession-driven decline of the budget capacity of many state and local governments has diminished both the social and physical infrastructure of both rural and urban communities. Many observers feel that the short-run-driven agenda to balance budgets by reducing investment in human capital spending will have long-term impacts that will trickle down to the smallest of communities.

Consumption Versus Investment Spending

Some economists have proposed increased federal spending on education and infrastructure as a means of stimulating growth in the economy. Would such a proposal hold true for state and local governments? Such a proposal favors investment-oriented spending over consumption-oriented spending. While the breakdown of public expenditures into investment and consumption is not an exact science, nor do governments report data according to these categories, the July, 1992, issue of the *Chicago Fed Letter* attempted to classify expenditure data for the five states in the Seventh District (Illinois, Indiana, Iowa, Michigan and Wisconsin) by the two classifications. Investment spending by state and local governments includes capital spending (spending on roads, equipment, school buildings and other infrastructure) and noncapital education and noncapital health and hospital spending (Medicaid spending excluded). Investment spending is designed to enhance human rather than physical capital, for example, investment in education. The remainder of government expenditures are considered consumption expenditures and include corrections, social services and general government administration. Calculations published by the *Chicago Fed Letter* determined that consumption spending by state and local governments for the period 1968-1989 increased 140 percent. The growth in three of the invest-

Figure 1. Indexed Real Per Capita Growth Rates



Source: The Federal Reserve Bank of Chicago, *Chicago Fed Letter*

ment spending categories ranged from 52 percent for health and 27 percent for education to an 11 percent decline in capital outlays (Figure 1). The article noted that if Medicaid spending is included in health expenditures, the growth rate for health increases to 80 percent. Perhaps, if state and local governments were able to reverse the trend and reorient spending focused on investment spending, stimulation of local economies might occur (The Federal Reserve Bank of Chicago).

Trends in Infrastructure Investment

Spending on public infrastructure in the United States as a percent of GNP declined from 2.3 percent in 1964 to 1.7 percent in 1987 (Oregon State University Extension Service). The aging of rural water systems and waste treatment facilities is of particular concern in the United States. A large percent of the rural facilities constructed in the 1960s and 1970s were done so with a substantial infusion of federal grants which often paid up to 80 percent of construction costs. U.S. Environmental Protection Agency reports indicate

that 75 percent of all documented wastewater facility needs—upgrade and repair—are in rural communities of fewer that 10,000 persons (National Association of Towns and Townships). The reduction in available federal funds for upgrade, construction and repair as well as the change in the granting formula has diminished the opportunity for rural communities to engage in infrastructure repair and upgrade. While infrastructure investment has slowed for some specific services like water, sewer and roads, the same cannot be said for the construction of correctional facilities.

Prisons: A Booming Business

Contrasting the slowdown in physical infrastructure investment, is the growth in consumption expenditures on county jails and new state prisons. The construction of new correctional facilities is a booming business nationwide. For example, despite Michigan's stagnant economy and a strained state budget, the state embarked on an aggressive prison construction program in the late 1980s with the construction of nineteen new regional prisons. Though all nineteen correctional facilities are constructed, the state has been only able to fully operate seventeen due to state budget constraints. The Michigan Department of Corrections budget has increased from $389 million in FY 1986 to $867 million in FY 1992, a 122.8 percent increase (State of Michigan).

Despite the addition of seventeen new correction facilities, the state's prison system capacity is rated at 33,448 beds and is currently 4,000+ inmates over the rated capacity. Meanwhile, the average cost per prisoner has increased from $14,320 in FY 1982 to $24,833 in FY 1992. Adjusting for inflation, the average cost per prisoner has increased by 28 percent (State of Michigan).

Examining state corrections data only tells a portion of the story. The costs incurred by counties around the country that have embarked on county jail construction are another piece of the fiscal puzzle. The wave of new county jail construction has been motivated by changes in federal correction standards, the demand for jail space locally and a get-tough-on-crime demand by citizens. Additionally, local officials adopted a jail-for-rent policy to aid in financing operating costs. Unfortunately, the concept of supply and demand is not clearly understood and county jail space is in excess supply—even to the extent that counties bid against each other in filling county hotel (jail) space. The excess capacity and resulting costs have become a drain on already strained county budgets. The elementary economic education principle of "guns or butter" has become one of "jails or human services." Both states and counties seeking alternatives to rising correction costs have turned to privatization as a potential solution. It is estimated that by 1993, 10 percent of all U.S. minimum security inmates will be held in private facilities (Bennett, Sept. 7, 1992). However, the success of privatization of jails has had

mixed results around the country. The promise of job creation and lower average costs for prison operation is often not achieved (Bennett, Sept. 21, 1992). While the costs of incarcerating adults continue to escalate, an equally perplexing problem is the rising cost of juvenile detention.

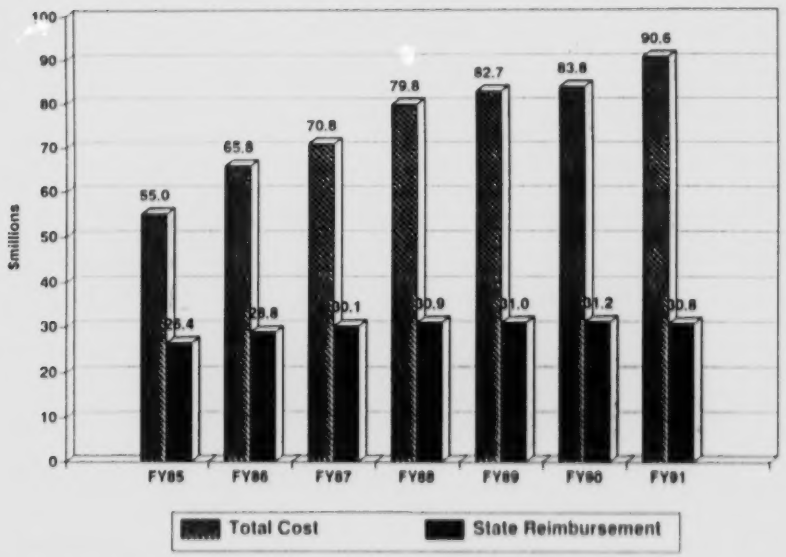
Child Care Costs

The spiraling cost of child care—the out-placement of abused, neglected and delinquent children—is a major concern to county officials around the country. County courts become involved or intervene at the request of parents, teachers, and social service or law enforcement agencies to protect the welfare of the child. Since the demand for child care activities and related costs is unpredictable, county officials face a great deal of uncertainty in planning budgets for the cost center. The cost of child care to Michigan counties has risen sharply, increasing from $55 million in FY 1985 to $90.6 million FY 1991 (Michigan Association of Counties). However, state reimbursement to county government has remained constant over seven fiscal years. See Figure 2.

The out-placement costs associated with juveniles represent the largest share of incurred child care costs, with juvenile detention

Figure 2. Michigan Child Care Expenditures

FY 1985 - 1991



Source: Michigan Association of Counties, *Michigan Counties*

training costs ranging from $173 to $189 per day (Phillipson). Local officials nationally are facing pressure to expand the number of juvenile correctional facilities to cope with the increased number of youth offenders coming in contact with the county court system. Since the costs of child care represent a mandated custodial function of county government, funding for juvenile out-placement drains off needed county funds for other county general services and represents a consumption investment discussed previously.

Role of Public Policy Education

The previous discussion and data is probably not new to most public policy educators. So what can land grant universities and extension public policy educators do about enhancing investment in the community social infrastructure? Three broad strategies are suggested: 1) investing in human capital building activities; 2) promoting collaboration in addressing community social problems; and 3) establishing aggressive public policy education programs. Land grant universities and the extension service have a long and distinguished history of addressing social issues. Perhaps what we need are new twists to our educational efforts.

Human Capital Building Activities

Historically, the extension service has prided itself on providing education and technical assistance aimed at enhancing human capital. Our success in the program development and delivery of community leadership development is well recognized. Replenishing the leadership stock of communities has been a challenge taken very seriously by extension. Countless leadership models have found their way into county and state specialists' plans of work and the need today is as great as in years past. The interest and financial support of the Farm Foundation and the W.K. Kellogg Foundation has resulted in thousands of community leaders benefitting from extension developed leadership programs. States which have thus far, for a variety of reasons, not become engaged in community leadership development programming at the county level are missing out on a rewarding experience and one that returns dividends to extension and the land grant university.

Providing technical assistance and training local officials is an additional human investment strategy for land grant universities. The financial difficulties facing state and local governments are complex and challenging to even the most astute public administrators and policymakers. Part-time officials and local governments without professional administrators face an almost insurmountable task in sorting out the fiscal problems and designing alternative remedies. Public finance education, budgeting, accounting, strategic planning, use of microcomputers, financial analysis and personnel management all

represent subject areas for which extension and the broader non-agriculture departments in our universities have skilled personnel to aid local officials.

Recently adopted reapportionment plans by states and sub-state units present an opportunity for public policy educators. The net result of reapportionment is that new faces arrive on the political scene and in local offices. Opportunities for extension-sponsored local official training abound following reapportionment and general elections. In Michigan, a *memorandum agreement* was developed with the Michigan Association of Counties fifteen years ago. Extension agreed to take leadership in providing educational training and workshops to county commissioners. The training covers a variety of subject matter—ranging from new county commissioner training to public finance and budgeting. The new commissioner training program reaches 80 percent of all newly elected commissioners. The training and outreach serves as an excellent introduction to commissioners on the capacity of the land grant university system to service the need of local officials. While the demand for follow-up technical assistance to individual counties at times strains the staff capacity to deliver, the program has been instrumental in building and maintaining county support for local extension offices.

Michigan State University's public policy education program attempts to service the needs of Michigan's 1,243 townships though the large number of townships makes it impossible under current staffing levels to respond to all requests. Our goal has been to train county extension field staff to service township requests where feasible. Extension is well positioned to assist sub-state units of government in strategic or long-range planning, an area almost totally neglected by local governments. The recession and continued financial stress in the face of growing service demands creates an environment for strategic planning. We have found that local governments have been most willing to pay the incurred costs for conducting strategic planning and for technical assistance.

Collaboration and Community Problems

The complex community social problems and the challenges faced by communities in social infrastructure rebuilding requires collaboration between public agencies, communities and local, state and federal government. Extension public policy educators and community development specialists have for years espoused the collaboration theme. Our research and technical assistance has demonstrated the benefits to be gained through intergovernmental contracting and collaborative arrangements. The recent conference, Multicommunity Collaboration: An Evolving Rural Revitalization Strategy, sponsored by the North Central Regional Center for Rural Development has no less than thirty-nine papers authored by fifty-five professionals addressing the issue of the strategies and benefits of com-

munity collaboration. No greater need for collaboration exists than addressing community social issues.

We all are familiar with situations in which investing in prevention save monies relative to taking corrective action later. A Children's Defense Fund analysis demonstrates the tradeoffs or opportunity costs between investing in prevention and intervention versus bearing the associated corrective action cost if no investment is made (*Youth Record*). For example, on the prevention side, providing $2,500 to provide a Head Start program or day care for the child of a working mother is equal to paying $7,300 to provide AFDC, food stamps and heating assistance for a mother of two who cannot work because of child care responsibilities. Table 1 provides this and other examples of preventive associated costs versus corrective action costs.

At last year's National Public Policy Education Conference, Michigan's Judge Joanna Neale discussed the unique program that linked county extension programs with probate court. The social intervention program was aimed at minimizing the need for sentencing juveniles to detention by involving first time offenders in constructive human capital building activities such as "youth-at-risk" programs. Such programs offer an opportunity for extension to form new part-

Table 1. Paying Now Versus Paying Later

Prevention Costs	Corrective Action Costs
$1,100 to provide a teen with a summer job	$20,000 to incarcerate lawbreakers
$2,500 to provide Head Start or day care for the child of a working mother	$7,300 to provide AFDC, food stamps and heating assistance for a mother of two who cannot work because of child care responsibilities
$600 to provide a year of compensatory education	$2,400 to have a child repeat a grade
$600 to provide comprehensive prenatal care for an expectant mother	$12,000 (on average) under Medicaid for intensive post-natal for underweight newborns
$68 to provide family planning services to teenage girl	$3,000 under Medicaid to provide prenatal care and delivery for an unemployed teenage mother
$654 million to provide literacy training and vocational experience to 40,000 trainees through Job Corps	$8.6 billion to provide AFDC benefits to more than 3 million families

Source: *Youth Record*

ners with the county court system. Extension's home economics and youth programs have much to contribute to social intervention programs administered by the courts. State extension systems must view collaborative efforts with court systems as a priority if for no other concern than the preservation of the local extension office. Since courts represent an increasing cost center in most counties, the courts are major competitors for the limited public resources—resources that could be allocated to human development programs. Without effective local social intervention strategies for which extension can be partners, local governments will continue to be consumption-investment oriented versus investing in human capital building.

Another program showing promise as a prevention strategy that has received strong endorsement from the courts, mental health agencies, social services and public health is Michigan's *Building Strong Families Program*, developed and piloted by Michigan State University extension. The program, using the Expanded Family Nutrition Education Program (EFNEP) model, targets low income, low-literacy parents with young children (between the ages of 0-3). Utilizing trained volunteers and para-professionals backed by the extension home economist, the program provides one-on-one educational training on a variety of subjects, including child development, discipline, playing to learn and a decision-making model for parents called *Smart Loving*. The goal of the program is to give kids a good start in life, build strong parenting skills and decrease the chances of the family entering the court system either due to abuse and neglect or aberrant behavior of their children. The *Building Strong Families Program* has the potential for extension to link with other county and state agencies in developing collaborative programming addressing the families most at risk, whose needs and concerns have the potential of imposing a much greater cost on communities in the future. As a juvenile judge in Cass County Michigan stated at a public forum, "Extension's *Building Strong Families Program* is one of only a few investments that our community can make to address the abuse and neglect problem which many of our low income, low-literacy families are experiencing." The judge was successful in convincing the commissioners of a county experiencing financial difficulties to appropriate monies to extension for the hiring of program aides to work with his juvenile court as a potential long-term solution to rising juvenile court costs.

Extension is well positioned to assist communities develop new institutional arrangements for delivery of such services as police, fire, emergency services, health care clinics, sewer and water facilities and recreational programs. Public policy education of officials on the benefits of such collaboration is needed because many officials still hold onto the concept that "cooperation is an unnatural act between two non-consenting adults." Service delivery through collaboration has proven to be a cost effective method, capturing economies of

scale and often permitting a higher quality of services to be provided to residents.

General Public Policy Education

The participation rate of 18- to 25-year-olds in the democratic process continues to be a problem nationwide. Participation by the age group in state and national elections has hovered between 22 and 27 percent of those eligible to vote in the age category. Seeking ways to involve young people in the democratic process is a challenge. Local, state, national and international government education has to be initiated before senior high school government class, a condition frequently observed in today's K-12 system. The participation rate by other age groups other than the senior citizen population is also low, especially in local elections in which one would think involvement would be the highest.

Extension public policy educators need to design basic local government education modules suitable for use in schools because it is apparent that primary and secondary educators have not seen citizen education, other than at school millage request time, as an educational goal.

Conclusion

We as public policy educators have not lacked for policy education opportunities. Despite our aggressive promotion of educational programming at our own institutions, the extension system has still not been committed in my views of making public policy education a dimension of our total extension programming. The policy specialists are too few in number at most institutions to meet the needs expressed in our local communities. The training of local county extension staff is a prerequisite for a viable public policy education. Considering the structural financial problems facing our states and local governments, the demand for what we as public policy specialists deliver will continue to grow. The reinvestment in the social infrastructure demands extension's involvement. We must be vigilant in capturing the teachable moment.

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THE STATE OF THE RURAL HEALTH CARE SYSTEM

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As one examines the health care system in the United States and in rural America, it is very easy to make seemingly outrageous statements and use expletives that may subsequently need to be deleted. That is because the U.S. health care system is simply outrageous. It is outrageous in the way that those with vested interests promulgate a set of myths about it. It is outrageous in what it costs us as Americans by comparison to health care systems in many other countries. It is also outrageous in the amount of waste, and in the excessive cost of administering the system.

In examining health care available to rural Americans it is a little hard to know just how one should approach the question. There is a problem in deciding just how we should frame the public policy question being examined. For example, is the issue to be discussed a question of the disparity between the health care available to rural people, as compared to the rest of the society? In this context we might examine alternatives for rural people that would seek to bring the services available to them more into line with what is the norm for the rest of the society.

Alternatively, is the issue one in which the care available to rural citizens is simply further evidence of dysfunction within the entire system? Under this framing of the question, the care in rural areas is simply additional variance within the system and the promising alternatives for rural people may be the same as for everyone else in a system needing massive system-wide change.

If I can refine our understanding of the rural health problem in just this limited way, I may have helped.

There are those who feel it important to distinguish between the health insurance system and the health care delivery system. Since I believe they interact considerably, I think we need to deal with the total. Further, since the means by which people gain or lose access to health care is through the means whereby their care is financed, I believe it is important to consider the rights or lack of rights to medical insurance as a part of the social infrastructure with respect to health care. The analogous point could be made with respect to edu-

cation and educational finance. Whether or not, in a particular state, access to some *minimum minimorum* of education is stated or implied as a constitutional right is a part of the social infrastructure with respect to education. Let's proceed and see where we come out.

The State of the American Health Care System

Without going into all of the gory details, it is useful to get some kind of an idea of where we stand as a nation on our health care system. Consider the following:

- According to the July, 1992, *Consumer Reports*, we will spend about $817 billion on heath care in 1992—about 12 percent of our GNP.
- Of that amount, *Consumer Reports* estimates that $200 billion are wasted on "overpriced, useless, even harmful treatments, and on a bloated bureaucracy." Canada's system, serving 25 million people, employs fewer administrative staff than does Massachusetts' Blue Cross and Blue Shield, which serves 2.7 million.
- Of the $817 billion, $163 billion goes for administrative costs according to *Consumer Reports*.
- *Consumer Reports* states that only a fraction of 1 percent of the total is spent on research.
- Malpractice insurance consumes 3.7 percent of physicians' practice receipts, though this amount is clearly higher for some high-risk and high paid specialties. Malpractice costs are less than 1 percent of the total in health care costs. Malpractice as the culprit in driving up health care costs is a straw man according to *Consumer Reports*.
- The 1987 rank of the United States among "selected" countries in infant mortality was 24th, with Spain, Hong Kong and Singapore, among others, ahead of us (National Center for Health Statistics). **Note**: Remember that infant mortality is the statistic that basically tells us what kind of prenatal care is widely available to pregnant women in a society.
- Life expectancy at birth, a measure of our overall health system performance, was 23rd for men and 16th for women. One would be better off being born a male in Hong Kong, Spain, Costa Rica or Cuba than in the United States, and better off being born female in Puerto Rico, Spain or Hong Kong (National Center for Health Statistics).

The July, 1992, *Consumer Reports* suggests some widespread myths about the American health care system that are worth sharing with you.

Myth: Although some 35 million people are not covered by insurance, the rest of us are getting very high-quality care.

Fact: Some of the rest of us are doing well. Many others are victims of a system that traffics in superfluous equipment, unnecessary and potential harmful surgery, over-medication and questionable procedures. Consumers end up paying the ever-escalating bill for all that, either directly or, when employers cut back on coverage, indirectly.

Myth: Our country cannot afford to spend much more on health care.

Fact: It does not have to. The Consumers Union estimates the combination of waste and excessive administrative costs amounts to $200 billion—enough to provide quality care to all Americans without additional government spending.

Myth: Our system gives us the best medical care in the world.

Fact: Our system puts us near the bottom among industrialized countries in infant mortality, the availability of high-quality primary care and public satisfaction (*Consumer Reports*, July, 1992, p. 411).

Who Are the Least Well Served?

Clearly the least well served by the United States health care system are those citizens who have no medical insurance coverage. There are, according to the Employee Benefits Research Institute, 36.0 million Americans with no health insurance. By all accounts they are the working poor—those not poor enough to qualify for Medicaid—the self-employed, and the employees of small businesses. These clearly are many of the folks of rural America and, indeed, are found in disproportionate numbers there. Of the nonelderly population without insurance, 17.4 percent are in rural areas as against 16.3 percent in urban areas, according to the Employee Benefits Research Institute (EBRI).

The next least well-served group in the national health care system are those citizens covered by Medicaid. This is so because the Medicaid coverage is generally considered to be less than adequate to provide for even primary care services. There are 24.2 millon "covered" by Medicaid. Again there are proportionately more of the nonelderly persons covered by Medicaid in rural areas than in urban, 10.3 percent as compared to 9.3 percent (EBRI).

In an effort to better describe the numbers of Americans who are medically underserved, the National Association of Community Health Centers (NACHC) counted the people who have inadequate access to primary health care because of their economic situation, their existing health status or geographic proximity to sources of pri-

mary c. re. Described as "at risk" for underservice are the low income uninsured, the nonelderly "covered" by Medicaid, and low income persons covered by Medicare. More than 50 million, or 20.5 percent, of our citizens fit the at-risk category.

NACHC describes as "underserved" those of the at-risk group that are already in communities exhibiting poor health status or measures of inadequate well-being, or who are in communities exhibiting physician shortages. They find 17.2 percent, or almost 43 million, of our people to be medically underserved.

Whether we count the 60.2 million Americans without any insurance or on Medicaid, or whether we consider the 43 million identified as medically underserved, we are not doing very well.

What Drives the U.S. Health Care System?

According to Consumers Union, " . . . the system is geared to providing the services that can earn physicians and hospitals the most money—not the ones that will do the public the most good. . . . During the 1980's, while American hospitals were falling all over themselves to add costly, high-tech neonatal intensive care units, the number of mothers unable to get basic prenatal care climbed, as did the incidence of premature births." (*Consumer Reports*, July, 1992, p. 447).

Because the basic design of the medical insurance system was aimed at securing a steady cash flow for hospitals rather than in insuring individuals against disaster, the medical finance system has been easily manipulated to increase the incomes of both hospitals and doctors. In economic terms, hospital insurance was designed to solve an option demand problem that hospitals have. "Hospital insurance" would provide services up to some maximum, based on prepayments. When that program is administered for them by Blue Cross and Blue Shield, the hospitals have an interest in pricing their services as high as possible, since they do not worry about the individual's limits.

Similarly, when the same scheme was applied to doctors' services, it was in the interests of both hospitals and doctors to employ practices and techniques that captured as much, and as quickly as possible, all of the "insurance" coverage available. Further, unlike auto insurance, medical insurance does not "indemnify" you against a loss, giving you the choice between getting the car repaired or pocketing the money and taking the bus. You only get the benefit if you are in the hospital. Thus hospitals need doctors to prescribe "hospitalization."

When "flat rating"—that's what auto dealers do on specific repairs—$85.50 for labor to replace a water pump regardless of the amount of time—was employed by insurance companies to bring

medical costs into line, doctors and hospitals went for new high-tech medicine as a way to beat the system. Induced demand for new techniques meant a new chance to establish a new, high price structure, and to continue to pump the system.

There is, for example, evidence that hospital occupancy rates are similar in communities with very different numbers of hospital beds per thousand population. Thus, it is not wrong to conclude that the use of hospitals is a function of the numbers of available beds, not of the medical need for hospitalization. Similar evidence of Say's Law—supply creates its own demand—run rampant exists in the use of all manner of medical practice from open heart surgery to the use of CAT Scans and MRI Scans. When that evidence is coupled with knowledge that the use of expensive, high-technology diagnostic testing by physicians is strongly influenced by whether or not they have an ownership interest in the laboratory or facility providing the service, it is very hard not to become very cynical about the whole system.

Rural Health Care

The findings of the study on the medically underserved by National Association of Community Health Centers provides some insight to the character and problem of health care and access to health care in rural America. To determine the number of underserved Americans, an index was created that included poor performance in health status, limited access to primary care physicians, or socioeconomic characteristics. The citizens in the communities in the lowest quartile were then considered to be underserved.

Of the total of 2,147 counties identified as underserved by primary care medical services, 74 percent of the counties were rural, although the urban counties accounted for many more underserved people. The majority of the counties designated as underserved (73 percent), were so designated because of depressed health status rather than access to physicians. In rural counties, access to physicians was much more significant in determining underservice than in urban counties, although more than two-thirds of all rural counties were determined to be underserved by reason of depressed health status alone.

There was, indeed, considerable variation in regions of the country in the determinants of medical underservice. For example, in North Dakota, Nebraska, Tennessee, Missouri, Utah and Vermont, physician shortage was a key role in determining medical underservice. Other areas were designated as underserved because of reduced health status from causes treatable by primary care facilities. This suggests that the approaches to ameliorate problems in rural health care will vary from community to community or state to state. For example, where the problem of underservice is associated

with poor health status resulting from ignorance as much as access, then vigorous educational programs may contribute significantly. Conceivably both the health care problems associated with high infant mortality rates and morbidity from immunizable diseases could be partially addressed in this way. Conversely, where the problem is clearly one of access to primary care facilities or physicians, the approach will be much different.

Interestingly, though not reported, the results of the NACHC study indicate that 18 percent of urban (metro) people are medically underserved as compared to over 15 percent of rural people. I have had no opportunity to seriously evaluate the method of determining medical underservice. However, it would appear that, while there are proportionately more uninsured persons and more persons at risk for underservice in rural America, rural Americans at risk fare somewhat better than do those in urban areas.

Conclusions

When I started to prepare this paper, I was planning to talk about quite different things.

It is true and important that Medicare reimburses rural hospitals at a lower rate than urban hospitals, and that is making life very difficult for many of those rural hospitals.

I was going to address the notion that maybe some of those hospitals should, indeed, go out of business or be consolidated with others on the grounds that a good outpatient clinic with good communications with an urban hospital would be better than a mediocre rural hospital with inpatient services.

I was going to talk about the role of emergency medical services (EMS) provided by volunteers, and the increasing possibilities offered rural communities by telemedicine, including teleradiology and other improvements in communications.

I was going to talk about the potential and the problems of institutionalizing home care for the elderly or others with needs for long-term care.

All of those concepts are relevant to a viable social infrastructure to serve our rural communities health care needs.

However, I think the most telling fact of all is the one indicating that rural Americans, more at risk for underservice, are doing better than their urban brothers and sisters.

It is clear that the remoteness, the isolation for physicians, the poverty and lack of health insurance, and the limited health facilities result in a health care system that is substantially different in rural America than that available in urban America. However, it may very well be that the reduced system available in rural America is

still more effective than all of the fancy high-tech approaches available in the cities.

One can imagine that a community like Brandon, Vermont, with thirty-five trained volunteer members of the EMS program providing a community of about 6,000 people with around the clock ambulance and emergency medical coverage, may indeed have a higher level of medical and health consciousness, than is the case in many urban communities.

Finally, the degree to which rural people are denied access to the larger national health system, may be the degree to which they have been saved from a fate that, indeed, includes death for many of those who seek help, but are malserved by that system.

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ALTERNATIVES AND CONSEQUENCES OF HEALTH CARE PROTOTYPES AND DEVELOPING A PUBLIC POLICY EDUCATION PROGRAM

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Health care is an issue which touches all of us. And many experts think our health care system is breaking down. Polls reveal most Americans are dissatisfied with the system, but are satisfied with their own personal health care.

The American public is concerned. A 1991 Gallup poll found that 91 percent of Americans believe we face a national health care crisis, and 85 percent feel the system needs reform (Aging 2000, 1991b, pp. 3-1).

Much of the literature indicates the need for *a health care system approach*. A review of literature identifies many specific issues, to name a few: managed competition, universal access, cost containment, preventive component, voucher to negotiate with insurer, tort reform for medical malpractice, administrative simplification, "kiddy care" program, private market approach, employer-based approach, and government-based approach. But few take a systems approach to studying our health care system.

Aging 2000 began in November of 1989, when a group came together to study ways to improve health care in Rhode Island. The group focused on health care for the elderly. But the detailed analysis of care for the elderly can yield improvements for the system as a whole.

The Study—A Systems Approach

The study, "Aging 2000," relied upon the hard work of ten staff, the dedication and involvement of more than 150 committee members and the cooperation of thousands of people interviewed and observed at work around the state and across the country.

The Aging 2000 Committee began with no preconceived hypoth-

eses. No uniform questionnaire formed the basis for its interviews. Instead, the staff adopted an open-ended approach, allowing those interviewed to set the course of discussion.

Economists, researchers and public policy educators need to look more closely at the opportunities of a systems approach to public issues. A system is a set of parts coordinated to accomplish a set of goals. The systems approach characterizes the nature of the system in such a way that decision making could take place in a logical and coherent fashion and insure that none of the fallacies of narrow-minded TP5.3thinking occur. Time and planning are important elements in any attempt to design human systems. This means laying out a course of action that can be followed to achieve the desired goals (Churchman, p. 29).

Since these early studies of systems, many practical minded managers and citizens have asked whether the systems approach has really paid off in practice. Now CEOs are attempting to see if *total quality management* can cure the health care crisis.

In a New Jersey study, the director of quality management says, "typically, hospitals build their systems around what is convenient for the institution, not the patient" (Gerber, p. 26). Some hospital CEOs believe they have found a useful tool to attack the waste, inefficiency and mistakes that help swell our national health care bill: Total Quality Management (TQM). The system would be more efficient and produce greater customer satisfaction (Gerber, p. 26).

If we go to the leadership literature, we find many techniques that can be used to assist in getting people involved in the process; and to identify issue components, the stakeholders, and the players in the health care system. For example: concept mapping, which begins to get people thinking about the whole system. Concept mapping is a way to pictorially represent concepts and relationships held by an individual or a group. It is a process to draw on individual and group thought and present information to prompt further analysis.

The components of the health care system studied in Aging 2000 included: hospitals, physician care, nursing homes, community health centers, community mental health centers, renal dialysis centers, pharmacies, health insurers, home health care and personal care (homemaker, home health). It also reviewed other care services such as: hospices, ambulance companies, home-based infusion therapy providers, surgery centers, suppliers of durable medical equipment, rescue services, rehabilitation centers, walk-in emergency health centers, laboratories and a host of other providers that round out the Rhode Island health care system. The state departments of Health, Elderly Affairs, Mental Health, Retardation and Hospitals, Human Services, and Children, Youth and Families all provide health programs (Aging 2000).

A number of additional agencies and programs, though not strictly

health related, provide health services particularly to the elderly. These include: sheltered care homes, adult day care and nutrition programs (Aging 2000).

Other authors provide frameworks for looking at an organization. For example, Bennis provides a description of a hospital's *external* environment. The *primary* environments include: 1) suppliers—insurance companies, doctors, labor markets, donors and suppliers; 2) consumers—general public and the research community; 3) interfacing organizations—medical profession, teaching hospitals, board of directors, volunteer groups, health insurance and drug companies. The *secondary* environments include: 1) technological—medical technology, administrative systems and pharmacology; 2) political/legal: medicare system, deductibility of health costs, FDA, licensing agencies; 3) social—public attitudes, health fads, environmentalism; 4) economic—health care costs and domestic business climate; 5) institutional—nursing homes, academic medicine, public sanitation and HMOs. (Bennis and Nanus, p. 159-160).

Data Collection

The research took Aging 2000 staff to high-rise apartment buildings for the elderly, meal sites, adult day care centers, nursing homes, Medicaid offices, senior centers, and to public hearings on issues of concern to the elderly. They rode on vans, met with social workers, made rounds with visiting nurses, visited hospice patients, talked with ambulance drivers and interviewed doctors. Aging 2000 held round table discussions with pharmacists, hospital discharge planners, hospital patients, and the residents and staffs of nursing homes.

The people and institutions visited opened the doors to their lives and their jobs, allowing the staff to understand "the system" from the inside looking out. Without the cooperation and openness of all those who participated, the study could not have been as thorough.

To build a framework for what the researchers discovered about the Rhode Island health care system, in a broader context, the staff studied the national literature on health care for the elderly and visited states and other nations that have instituted innovative programs.

The Aging 2000 staff performed a strategic cost analysis of Rhode Island health care institutions. The cost analysis reduced how an institution spends its time and money to minutes and dollars. To analyze the system, staff observers spent months following doctors, nurses, aides and patients in health care settings: nursing homes, physicians' offices, hospital units, emergency rooms and private homes.

The Aging 2000 staff synthesized what it learned and presented

findings and observations to the committee. Committee members broke into smaller groups to review problems and devise solutions.

One physician explained, "They don't teach us group dynamics in medical school, physicians aren't trained to work in a team" (Aging 2000, 1991b, p. 6-6). Because teamwork and the sharing of responsibility is not encouraged, the choice becomes either to legally allow individual nurses, social workers and others to exercise judgment in performing certain functions or to discourage them from doing so. The increasing threat of malpractice litigation and regulatory restriction reinforces a health care culture built on following orders (Aging 2000, 1991b, p. 6-9).

The use of semi-autonomous teams to take responsibility for quality, the trend known as Total Quality Management, that has proved so successful in other industries, has just begun to permeate health care. The lag in adopting such practices is especially unfortunate because the variety of needs and varying nature of patients makes health care particularly inappropriate for overly rigid standardized procedures and regulations (Aging 2000, 1991b, p. 6-9).

Once the data has been collected it is important to facilitate discussion as to the interpretation of the data. To build consensus as to what the data means and how it can be used to change and improve the system.

Researchers and public policy educators have the knowledge, resources and experience to educate and assist groups with data collection skills. However, we may need to expand our techniques to include those skills that complement the concepts of "total quality management": interviewing, listening, clarifying, questioning, facilitating and observing skills. Others include: group dynamics, focus groups, team work and conflict management.

In our research and education can we change to an open-ended approach, not predicting the outcome with a preconceived hypotheses and using a uniform questionnaire?

Perhaps we also need to ask ourselves some questions. How best can we contribute to improving the health care system? How much time can we commit to such a project? An Ernst & Young partner says TQM efforts need continuity of leadership to survive (Geber p. 27).

Findings, Conclusions and Recommendations

Aging 2000 found that consumers and providers were most concerned about seven major problems: 1) Poor information flow and work organization impede the delivery of quality care. 2) Bureaucracy hinders professionals who attempt to offer responsive health care. Bureaucracy also frustrates and confuses patients. 3) Medications are too costly and too often misused by elderly patients. 4) Cir-

cumstances of the system conspire to force many elderly Rhode Islanders to give up their homes as they age. 5) The lack of education and training about the aging process hinders the ability of consumers, caregivers and providers to respond appropriately and effectively. 6) The cost of health care continues to climb. 7) No clear ethical principles consistently guide medical decision making (Aging 2000, 1991a).

The major report discusses each of these problems and presents recommendations for solving them. It aims to stimulate discussion among all Rhode Islanders which will lead to improving health care within their state.

Though the study focused on the population over age 65, problems of high cost, poor quality and excessive bureaucracy affect the entire health care system. Innovations that succeed in providing high quality care at reasonable costs for senior citizens can point the way to improving the health care system for everyone.

Quality Control Problems in Health Care

The health care system does not exhibit many of the fundamental principles that have produced quality work organizations in other settings. Information flow is poor. Rigid hierarchies discourage front-line workers from taking responsibility. Quality control systems are inadequate. Excessive specialization impedes teamwork. Patients shuttle from one provider to another with little continuity. Mental health problems are ignored. Reimbursement regulations create perverse incentives, driving patients into more costly and less appropriate settings. Until the systemic inhibitors of quality are removed, the health care system will not deliver the quality of care the elderly deserve (Aging 2000, 1991b, p. 6-21).

The Paper Trail

The growth of bureaucracy in health care does more than frustrate, confuse and deny care to consumers and providers. It means Americans are paying more and getting less value for their money than citizens in other developed countries.

When nurses spend their time filling out forms, they are not giving care. When doctors prepare files to document treatment for reimbursement purposes, they are not treating patients. When tax dollars fund trails of paper, they cannot also pay for quality care. The paper trail can compromise quality. The paper trail costs money—money better spent on health care (Aging 2000, 1991a, p. 45).

Problems with Medications

Medications are vital to controlling chronic conditions, preventing death and curing disease. However, medications also can cause sig-

nificant health risks—when taken incorrectly. Drug reactions, side effects and the results of dangerous combinations take many forms (Aging 2000, 1991b, pp. 8-13).

Better education among both consumers and providers, as well as a better flow of information in the health care system, can improve the chance of avoiding adverse drug reactions (Aging 2000, 1991b, pp. 8-13).

The *Senior Series* has a unit on medication. These educational materials provide a starting point of opportunities for educators, to bring together the individuals, groups—public, private and non-profit—to provide interaction, exchange of information, and consensus about policy.

Housing and the Elderly: The Struggle to Stay Home

Today most elderly people live in the homes they chose when they were not elderly. Those houses may need modification and helpers to serve as appropriate homes for frail, disabled or ill occupants.

Elderly people cannot always obtain modifications or assistance and are forced to weigh the advantages of where they live against the disadvantages of going without help. When their need for services overshadows the benefits of home, they must uproot their lives to obtain help, often moving from place to place, repeatedly undergoing the stress and disruption of moving and adapting to new surroundings.

It is not always the debilitating stroke or the advancing cancer that forces people to leave their homes. It is the little things—help around the house. While moving to a more structured setting may be a welcome relief for some elderly people, those who dread such placement should have more alternatives. Unwanted nursing home placements can cripple families and cause elderly people to give up their will to live (Aging 2000, 1991b, pp. 9-21).

With cooperation and collaboration of housing and health care professionals, there are numerous research and education materials available for addressing elderly housing options. For example: *Housing As We Grow Older*. There is a need to create policy at the community level so these options are available.

Caring for the Elderly: The Education Gap

The better educated and trained doctors, nurses, social workers and other health professionals are, the better equipped they will be to care for an aging society. But the system of education and training is neither comprehensive nor systematic (Aging 2000, 1991b, pp. 10-17).

Elderly consumers and their families, when armed with knowledge and understanding about the aging process and about programs available for older people, can more successfully navigate a difficult system at a difficult time of life. But often older people understand little about what is happening to them and less about what programs are available to help (Aging 2000, 1991b, pp. 10-18).

The *Senior Series* provides initiative for establishing interdisciplinary/interagency groups to research issues and develop education regarding health care policies and programs.

The Costs of Caring

Fear of litigation, unnecessary emergency room visits, reimbursement policies that encourage institutional care, poor flow of information that causes duplication of tests and services and lack of in-home care—they all drive costs in health care.

Through the detailed cost analysis performed by Aging 2000, we have met the drivers of health care costs, and they are a multitude of reimbursement-driven rules, regulations and traditions that create administrative costs and poor work organization.

The Aging 2000 study suggests that the real villain in rising health care costs is not expensive technology, nor tests, nor extreme medical events. The villain lies in the way Americans organize the work of health care (Aging 2000, 1991b, pp. 11-30).

Ethical Dilemmas

Thousands of individual decisions are made every day in the United States that implicitly apply ethical standards to health care. Too often these decisions are not guided by clear ethical guidelines which have been explicitly developed. As a result, many consumers and care givers are left with uneasy feelings about the values that underlie the way our health care system actually operates.

For a system to be truly driven by explicit ethical standards, moral ideals must be established as goals, even if they cannot always be met to the letter in practice. These goals must address issues of equality of access to care, the degree to which trust should govern, who has the responsibility for care and for end-of-life decisions and whether care should be rationed based on economic and community goals. Our system does not do this today (Aging 2000, 1991b, pp. 12-13).

The proceedings of the September, 1992 Association of Leadership Educators Annual Conference: Ethics and Leadership proceedings, plus other resources provide opportunities for education and policy development regarding ethical guidelines or standards.

Rhode Island Initiatives for Elderly Care

Rhode Island institutions have begun to address the problems identified in the Aging 2000 report. While limited in scope, these ventures contain the seeds for improved comprehensive care. They point the way toward constructive and far-reaching reform (Aging 2000, 1991b, pp. 13-1).

Here are a few examples of hospital programs: geriatric assessments and multidisciplinary team treatment, hospital-based outpatient geriatric assessment, and home care programs (Aging 2000, 1991b, 13-1-3).

Community programs address the needs of the elderly for getting out, staying active and socializing, which play an important role in preventing illness. Especially as seniors begin requiring help to get around and losing friends and loved ones to death, their risk for depression and isolation increase. The Department of Elderly Affairs coordinates and develops programs and activities often referred to as the "aging network" (Aging 2000, 1991b, 13-4).

Other community programs include: transportation, senior centers, nutrition programs, senior clubs, support groups, adult day care centers, respite services, emergency response systems, hospice and housing (Aging 2000, 1991b, 13-4-12).

Almost all institutions and programs that work with the elderly require support of hundreds of volunteers. Creative efforts by several religious organizations mobilize volunteers to reach the elderly in institutions as well as in the community (Aging 2000, 1991b, 13-12-13).

Programs now exist that help elderly people who are at risk of being institutionalized to remain in the community. In addition, many Rhode Island nursing homes have organized interdisciplinary teams and specialized services to improve care. For example: the Medicaid "waver channeling program," nursing homes without walls, nursing home to hospital linkages, nursing home team meetings and specialty units providing care in the areas of rehabilitation, dementia and alzheimer's (Aging 2000, 1991b, pp. 13-14-16).

Educational initiatives in long-term health care have emerged along with others: the New England Gerontology Academy, a collaborative effort; multidisciplinary program; staff and family education, training programs for nursing assistants; education programs by college students at senior centers, adult day care centers and housing complexes; and advocacy programs (Aging 2000, 1991a, pp. 13-16-17).

The capacity of professionals and consumers to create innovative, effective and exciting programs provides many opportunities. New collaboratives are always being formed and new services devised. These programs point the way toward a system that could provide

better care, that would allow more people to remain in their homes and that would improve training in geriatrics (Aging 2000, 1991b, pp. 13-19).

Opportunities abound to identify existing health care programs, create an educational environment for discussion of more effective program delivery, and form networks and collaboratives. There is a need for people to understand the difference between cooperation and collaboration. Example: Interagency Collaborative of Newport. Twelve human service agencies provide services to middle school students but their future goal is to work with the family. Costly fragmentation in service delivery has prompted reformers like Wegenke to call for collaboration among agencies serving children and families. Not only can collaboration help existing institutions better use current resources and avoid duplication, it has the potential to help children and families develop educationally, socially, and emotionally simultaneously. (Bruner, p. 5).

National Models

Providing cost-effective, appropriate, responsive care to the elderly is a challenge nationwide. Many states and agencies are launching innovative approaches to meet the challenge.

To learn from the experience of others, Aging 2000 looked at how other places are addressing problems of health care for the elderly. Rhode Island will require Rhode Island solutions, and efforts that work well in Oregon may not work well in Rhode Island. However, many public and private programs around the country are devising new ways to approach common problems (Aging 2000, 1991b, p. 14-1).

Although state governments have far less power over health care than does the federal government, more state legislatures and governors are acting to reform the parts of the health care system they control. Almost two dozen states have passed or are considering legislation to fill the policy vacuum created by Washington, D.C.'s inaction on health care. They have acted because the problems of access and runaway costs are having a tremendous impact on state budgets and on the quality of life for many people. Health care expenses—particularly Medicaid and health insurance for public employees—have increased so much in the last ten years that they are among the leading causes of state budget crises (Niedergang, p. A-17). Niedergang indicates change is much easier to bring about on the state level—where a group has more clout—than on the national level.

If researchers and extension identify health care as an issue, consideration must be given to: identifying internal (within the land grant university) and external networking; identifying groups, organizations and policymakers that are involved with health care pol-

icy and programs; sharing research and education information; and building new relationships with health care providers and professionals. A critical element is to focus on the goal.

Recommendations

Aging 2000 recommends that:

- Explicit ethical guidelines inform the delivery of health care to the elderly.

  These guidelines would create a standard that all health care professionals would strive to meet and would include the following principles. All elderly are entitled to: 1) adequate and appropriate health care, regardless of age, race, religion, ethnic background, degree of frailty or level of income; 2) the right to guide decisions about their care even when they become very old. Health care providers should encourage patients to play an active part in important decisions about their care whenever possible. They should educate consumers about options and alternatives and provide all the information necessary for knowledgeable decisions; 3) a health care system that operates on the basis of trust between patient and doctor, doctor and insurer, patient and institution, and doctor and institution and all of these must be able to operate on the basis of trust in relationship to government, where trust breaks down. Health care providers should be held morally accountable for their actions, but, whenever possible, this accountability should be addressed by internal review groups rather than be the subject of litigation; 4) a system that encourages families and friends to take care of one another in times of need and particularly in old age, promotes this ethic, supports caregivers and volunteers and catalyzes community support; and 5) an ethics committee of religious, health care providers and consumers to set explicit ethical guidelines, which would be revised over time and reviewed for major ethical questions (Aging 2000, 1991b, pp. 15-2-3).

  An ethical system of care would place higher priority on the physical, mental and functional well-being of the individual than on following protocols for how to cure a specific, acute problem (Aging 2000, 1991b, pp. 15-2-3).

- A statewide patient information system.

  This information system would insure ready access to accurate, up-to-date information essential to providing sound care.

  This data would take into consideration the patient's full condition to improve the quality and efficiency of health care and assist professionals in providing appropriate and responsive treatment and reducing costs. This computerized patient information database, with access terminals in the offices of health care pro-

viders, would store information such as medical history, prescribed medications, living circumstances and emergency contacts. A small plastic "smart card" would be embossed with an electronic device to store this information. Information would be added or deleted as conditions change (Aging 2000, 1991b, pp. 15-7).

- Improved quality and control costs in the health care system.

  This would be achieved by working with providers to accelerate the introduction of total quality management and high performance work organizations. The key characteristics include: quality control in a "bottoms up" process; development of a process that involves all employees in continuous, incremental improvements in work procedures to achieve the goals, development of measures to assess progress toward the goals—direct assessment of consumer satisfaction; assumption of group responsibility for results combined with a positive incentive system that encourages success and uses failure as a learning device; increased responsibility for frontline workers and a more collaborative approach to problem solving; increased emphasis on training and education on a continual basis to improve skills; reduction in bureaucracy and documentation; and a greater overlap in job function to reduce the rigidities and frustrations associated with narrow job definitions (Aging 2000, 1991b, pp.15-10-11).

- The establishment of a Training and Resource Center.

  This center would sponsor lectures, seminars and inservice teaching for health care professionals, students outside the health care field, police officers, transportation drivers and family caregivers. The center could become a 24-hour resource for elderly consumers and their families with access to up-to-date information from published materials, counselors and staff and provide help filling out forms and respond to questions about medications and services. The Center could organize teaching programs in hospitals, nursing homes, community centers and apartment buildings, and offer on-site courses on special topics. Medical, nursing and social work schools should offer courses in geriatrics and gerontology; and colleges and universities should establish clinical experiences in community settings and institutions (Aging 2000, 1991b, p. 15-15).

- Three models for elderly health care delivery: 1) the advocate, 2) total-care, and 3) home-care.

  Ideally these models would coexist, providing choices for consumers but would still be based on the overall principles and organizational framework of this research.

  The advocate model or the consumer driven model would have these characteristics: 1) a multidisciplinary assessment that con-

siders functional and social needs as well as physical and mental needs; 2) trained professionals (advocate) offer guidance in mapping an appropriate care plan with each client; 3) would function under a global budget and operate its own quality assurance system; and 4) by pooling resources and stripping away traditional restrictions, the money saved could be reapplied to a broader range of preventive services and work to keep clients as healthy and active as possible.

The total care model would offer a continuum of services through a single organization that pays for and provides care with these characteristics: 1) all services—health, social services, preventive, educational and informational—delivered through a community health care center; 2) multidisciplinary team would assess each client and the client would participate in care planning which would enhance continuity and coordination; and a global fund would be negotiated each year with federal, state and third party insurers.

The home care model is a system of community-based services for elderly residing in their own residences and wishing to stay within the current health care system, which might include the following components: 1) on-site clinics, physician visits, pharmacy reviews, a mobile health unit and a 24-hour response line; 2) community centers could serve as hubs, be an affiliate with physicians who make house calls; the delivery system could be designed to make optimum use of home health aides, visiting nurses, transportation services and home delivered meals; and expand respite care; and 3) modifications to residences to accommodate elderly needs.

Implementation

Aging 2000 is moving ahead to work with hospitals, nursing homes, physician offices and home health agencies to set aside units, floors or patient populations where they will organize the delivery of care using these methods. Other activities include: disseminating and discussing the report with interested groups; working with health care providers and consumers to plan and implement the recommendations; securing waivers and funding mechanisms to carry out the recommendations by conducting discussions with federal, state and private insurers; and seeking financial support from foundations to pursue these activities.

Public Policy

Health care systems are creatures of public policy in almost all nations. In some countries, the government runs the health care system directly and health care workers are government employees. In others, the government organizes or tightly regulates private groups

that insure consumers or provide health care to them. In the United States, health care services are privately insured and privately delivered for most people, through a regulation process. The main exceptions are the public insurance programs established for elderly and poor Americans.

Health care policy has seesawed between the two conflicting goals of controlling costs and expanding benefits. Cost control measures have focused on: raising premiums and co-payments; freezing doctors' fees; establishing pre-set rates for hospital services; and creating review organizations to oversee hospital and physician practices. Effort to expand benefits has focused on: covering more people and expanding programs to provide more health related services.

Government policy aimed to insure that cost controls did not reduce the quality of care and that the professions and institutions providing care were held to high standards. All of these goals were imposed on the system in an additive fashion. Each piece of legislation fine tuned the existing system without fundamentally changing it. Congress reacted to problems by introducing legislation that responded to only those problems. New legislation created its own set of problems, so another set of regulations addressed those. But the system grew more complex and disjointed and the concurrent goals of increased benefits and cost containment drifted further and further out of reach (Aging 2000, 1991b, pp. 3-5).

In 1981, Congress began to enact health care policy through the Omnibus Budget Reconciliation Act of 1981 (OBRA81), a trend that would continue through the decade. Congressional action has amounted to a tug-of-war between cost containment and coverage. The legislative practice of writing health care policy through budget reconciliation frustrates meaningful reform. The purpose of the budget reconciliation process is to deal with spending not governed by the regular budget appropriation process. As one member of Congress put it, "The process of reconciliation doesn't mesh well with long-term health care needs; it's about saving money here and now" (Aging 2000, 1991b, p. 3-14).

The prospects for controlling costs appear dim against the realities of an aging population, AIDS and rapid inflation in health care. Cost control efforts increasingly focus on limiting access to medical technology and procedures. For the first time, the federal government is preparing to consider cost as a factor in deciding whether Medicare will pay for certain procedures and drugs (Aging 2000, 1991b, p. 3-15).

With all of the forces at work, the health care debate during the 1990s essentially comes down to the same question posed in the last three decades: *how can the nation provide its citizens better access to better health care at a price it can afford?* (Aging 2000, 1991b, p. 3-15). This is our goal.

Despite the wealth of ideas represented by these and other proposals, many knowledgeable observers believe change will continue through incremental measures aimed at solving pieces of the problem. But, reform has evolved in this manner for twenty-five years and has not succeeded. New legislation attempts to correct problems created by previous legislation. Rising costs and lack of coverage continue to plague the American health care system (Aging 2000, 1991b, p. 3-16).

In resolving the health care crisis we face an enormous challenge. From Aging 2000 and other states' efforts there are many indications that significant reform of policies, programs and institutions are needed. The health care experiences suggest the process of change must begin in the way health care is delivered, paid for, funded and organized. Information and education is essential throughout the process.

Some concepts from *Beyond Interdependence* are relevant to health care (MacNeill, et al.). The relationships, interactions and decisions made by government, health care providers, suppliers, insurers, and patients and their families are dependent upon the interdependence of the health care system components.

To make the transition or paradigm shift from where we are in the health care system to where we need to go, means an improvement in the capacity to manage interlocked economic, cultural, social and health institutional components, to set the stage for a secure and sustainable health care system future with a steady improvement in the human prospect.

As a team member, researchers and educators can help set broad new directions for health care delivery. These directions include new principles to govern relationships between government, people and health care providers.

This is a big agenda for the 21st century. Health policy is important to American politics because it is closely tied to the issues of poverty, welfare and social insurance. To reach beyond the short term will require new and expanded tasks for all those involved. Health care policy is fundamental because the resources and attention given to health care, the institutions that deliver it and the way it is received affect the shape of social relations (Cochran, p. 262).

Linking tasks to the policy life cycle—recognition, policy formulation, implementation and control—may be a critical step for success. The intense conflict is in the recognition/problem identification stage. People demand action, the institutions resist it, and the government waffles (MacNeill, et al., p. 66).

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RURAL ELEMENTARY AND SECONDARY EDUCATION: FUNDING AND ALLOCATION ISSUES

Bob F. Jones and Kevin T. McNamara

Education reform remains a critical public policy issue after more than a decade of discussion and reform in public elementary and secondary education in the United States. Curriculum reform was recently the focus of a special supplement to the *Wall Street Journal*. What American education must do to provide the human capital base to maintain and sustain the United States' economic competitiveness, however, remains a critical public policy question. Policymakers, parents and businessmen do not know just what educational dollars should purchase, but they know that they are not getting it!

The 1980s saw a wave of education reform at the elementary and secondary level in response to a public belief that American schools were failing the nation by turning out students who lacked skills to be competitive in a global economy. This belief was supported by studies of organizations such as the National Commission on Excellence in Education, the Business-Higher Education Forum, and the Southern Growth Policy Board.

A key theme in calls for educational reform has been, and continues to be, competitiveness in a global economy. Anthony Carnevale, economist for the American Society for Training and Development, estimates the annual economic costs of this poorly educated work force at approximately $25 billion in remedial training and lost productivity.

While education policy is directed at affecting school outcomes, it is strongly related to funding. To increase service levels or school output, public schools must raise more funds through local sources, increase the level of transfers received from other units of government, or use existing funds more efficiently. Thus, increasing levels of education output require new or expanded local or state tax support, or a better understanding of the education process so gains can be made in production efficiency. As rural areas continue to face difficult economic times, education funding and efficient allocation of resources within school systems will become increasingly important issues for rural schools. Without strong fiscal support for rural education and improved efficiency in the development and delivery of

education programs, rural education will not be able to provide the human capital base needed to sustain rural economies. Students who graduate from these schools will lack the skills and abilities to compete for employment in a competitive work force.

Public Elementary and Secondary Funding

Public elementary and secondary education has undergone dramatic changes in size, structure and funding levels over the past fifty years. There has been a dramatic decline in the number of school districts while student enrollments soared. In 1949-50 there were 83,718 school districts in the United States with an enrollment of about 25 million students (U.S. Department of Education). Average school district size was 300 students. By 1990, national student enrollment had increased to more than 40 million students, while the number of school districts dropped to fewer than 16,000 and average school district size had increased to slightly more than 2,600 students. The decline in the number of one-teacher schools underscores the changes that occurred in rural education. In 1953, there were over 42,000 one-teacher schools in the United States representing 31 percent of all public schools (U.S. Department of Education). The number of one-teacher schools had declined to 729 by 1987, making up less than a tenth of a percent of the nation's 84,427 schools. Rural and urban school districts closed, consolidated and grew in response to the continuing economic and demographic restructuring of rural communities.

Increased funding for education accompanied student enrollment growth. Nationally, total per pupil expenditures for education (measured in constant 1990 dollars) increased from $449 in 1920 to $5,717 in 1990. Per pupil expenditures increased 33 percent over the reform decade of the 1980s. The funding growth for public education has been accompanied by a shift from local government as the primary source of funds for education to a shared local-state government funding system (Figure 1). Funding for public elementary and secondary education shifted from an average of 83 percent local sources (primarily property taxes), 17 percent state funds and less that 1 percent federal funds in 1920 to an average of 46 percent local, 48 percent state and 6 percent federal. There remains, however, considerable variation in distribution of funding support by source across states. At one extreme is Hawaii with about 87 percent of funding for public education coming from state sources. New Hampshire is at the other extreme with 91 percent of total school funding coming from local sources.

Instructional services accounted for 67 percent of budgeted school district funds for the 1988-89 school year according to the Education Research Service (Robinson and Protheroe). At-school administration represented 6 percent of the budget and central administration 5 percent. About 8 percent of the budget was allocated to student

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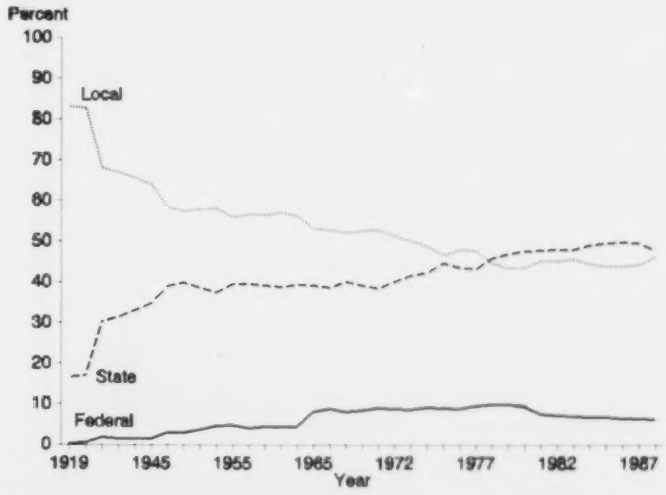
Figure 1. Public Elementary and Secondary School Funding, by Source, 1919-1988



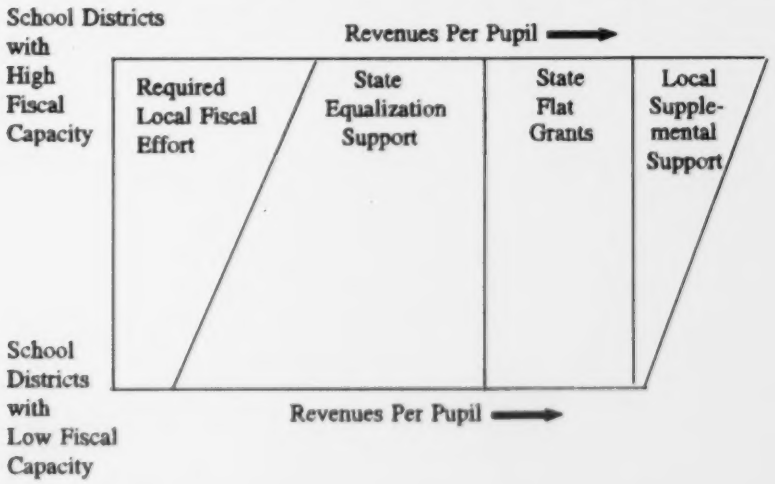
services (health, attendance, transportation, food, student activities). Maintenance and operations (9 percent), utilities (3 percent) and other current expenditure (3 percent) were the other budget categories. About 78 percent of current school expenditures (total expenditure less capital outlay, debt service and state pension contributions) is for staff salaries.

The growing state involvement in education funding has impacted local education as state mandates and regulations influenced almost all aspects of public education. State school finance systems provide flexible instruments for promoting state education policy objectives (Salmon). State funding systems have been structured to promote consolidation, curricula and student services policies at the district level through fiscal incentives and/or penalties based on compliance with state guidelines.

Most state school aid programs use a combination of flat grants and fiscal equalization grants to allocate state funds to school districts. Funds are generally allocated to achieve equity in per pupil expenditures, with little consideration to the actual costs associated with education. School districts can raise additional supplemental funds through tax levies in excess of the locally required fiscal effort. The structure of state education aid formulae directly affects rural education by determining funding levels available to rural school districts. Figure 2 illustrates a school funding system graphically.

Flat grants are allocated to school districts on some unit measure, such as average daily membership, independent of the district's

Figure 2. State School Funding: A General Model



Source: Adapted from Salmon, Dawson, Lawson and Johns.

wealth or fiscal capacity. The fiscal impact of flat-grant funding for metropolitan versus rural schools is generally considered neutral because allocations are independent of school size, local fiscal capacity, or other measures of school district size, wealth or performance. If a flat-grant system funded education at a level sufficient to achieve state and local education objectives, all districts would be treated equally. Most flat grants, however, do not provide enough resources to fully fund education needs. Local funds are required to supplement state funds. To the extent that rural communities lack the fiscal capacity to raise sufficient revenue to support education, they are negatively affected by state reliance on a flat-grant system to allocate state aid funds.

Equalization grants are allocated to school districts in accordance with the district's fiscal capacity. Wealthier districts are required to raise a higher level of local funds than districts with less capacity in order to obtain state equalization funds. Equalization funding systems attempt to equalize per pupil funds to assure equity for pupils across school districts, equalize access to revenue to provide taxpayer equity, or some combination of the two approaches (Verstegen). If a large share of state funds are allocated through equalization grants, rural areas tend to benefit. Equalization grants are the primary means of allocating state aid for education in most states (Salmon, et al.; Verstegen). Forty-one states used equalization grants as the primary method for allocating funds in the 1986-87

school year compared to eight that relied primarily on flat grants. The other state, Hawaii, has full state funding.

The components of state school aid programs and how they are measured impact school districts' fiscal situation. Pupil numbers, local fiscal capacity, transportation grants, cost-of-living adjustments, scale economies provisions, growth trends, capital and debt service programs, and incentive grants are among the factors that influence the level of funding available for education in rural school districts. How states measure these factors for funding purposes has important implications for rural education funding. Rural school districts tend to receive more equalization support when multiple measures are used to assess local fiscal capacity than when states rely solely on some measure of per pupil property valuation. Incorporating income measures into fiscal capacity measures, therefore, favors rural communities in state equalization allocations.

Many state education finance programs provide special support to rural school districts recognizing that small, rural school districts face higher operating costs (Bass). Twenty-four states allocate funds to rural areas in excess of the average per pupil guarantee on the basis of size and isolation factors. Sixteen states allocate additional transportation funds based on density factors. Nine states allocate funds to schools to plan or conduct cooperative programs.

Rural Schools

Rural school districts vary in size, structure and wealth. While many rural schools have wealth sufficient to meet the local share of funding requirements, many do not. Evidence suggests that small schools face higher per pupil cost for education. Fox concluded from a review of thirty-five school-size economies studies conducted in the 1970s that the minimum high school cost size was in the 1,400 to 1,800 pupil range. More recently, DeBoer and McNamara estimated a minimum school district cost size of 4,876, although most size economies were achieved when districts reached 1,800 students. Other research suggests minimum cost-size thresholds with enrollments of 500 students (Walberg and Fowler). Higher per pupil costs of small districts are associated with minimum fixed costs for inputs such as facilities, teaching and administrative staff, equipment and transportation that are required to deliver a basic education program.

School districts experiencing declining enrollments, many of which are rural districts, face higher and increasing costs. A study of Michigan schools indicated that declining enrollments result in sharp increases in per pupil expenditures because of limited short-term flexibility in purchasing inputs (Cavin, Murname, and Brown). Over time the expenditure level declines as school districts adjust input purchases to expected current enrollment. Some of the increase is the result of increased overhead associated with state and federal

requirements for maintaining and reporting data on various school operations (Anderson and Mark).

Rural Fiscal Capacity: Funding Implications

Rural communities throughout the United States have experienced economic decline as their economic and population bases continue to respond to changing economic conditions. In a 1990 study, Green and Schneider identify 583 counties with employment dependency on farming, mining and textile sectors that are experiencing fiscal stress because of declines in income and employment, declining property valuation and population out-migration. Drabenstott and Welch summarized the rural economy's performance during the 1980s as weak, especially in counties with strong dependency on farming and mining. Further, rural growth was proportional to rural places' proximity to metropolitan areas. The more remote a county, the less economic activity.

Local governments in America first began using property tax revenue to finance education in 1646 (Walker). Approximately $71 billion in local school revenue was raised from property taxes in 1987. Agricultural counties experienced dramatic declines in real property valuation as land values fell an average 27 percent from 1982 through 1989 (U.S. Department of Agriculture). Declines in agricultural income further impacted communities as the property values of towns declined about $15 for every $1,000 drop in permanent farm income (Stinson). Consequently, school district fiscal stress has been especially severe in farm states (Chicoine).

Average rural income of $18,142 is 74 percent of the average metro income. Rural household income levels are about 28 percent lower than metro levels (Economic Research Service). Young, educated persons continue to migrate from rural areas, potentially impacting rural communities' chances for attracting future economic investment which would sustain and expand their income, employment and tax base. Declines in a community's total assessed valuation of real and personal property can severely impact school districts' ability to raise funds locally.

A shrinking income and employment base suggests increasing fiscal stress, as all taxes including property taxes, are paid out of income (Reeder). Rural governments already spend 38 percent less per capita than their urban counterparts. Part of this difference is the result of lower service costs in rural areas. Reeder suggests the lower spending also reflects lower service delivery levels because low incomes and tax bases limit local government's ability to provide more than basic services. Policymakers must be concerned about maintaining a rural educational system that will prepare rural youth to be productive members of society, recognizing that a large share of these people will migrate from rural communities in search of in-

come and employment found in metropolitan areas. Rural communities' ability to provide the financial support necessary to operate effective educational institutions will be a critical issue as rural schools approach the 21st century.

Policy Options for Supporting Rural Education

Future funding of rural education will become an increasingly important issue as fiscally stressed rural governments seek financing to support local services. The current budgetary problems facing state governments make it unlikely that they will be able to come to the aid of rural school districts. Several policy options have been suggested (Alexander, Bass, Honeyman, Salmon) that would provide financial assistance to rural schools. The current fiscal difficulties of state governments suggest that restructuring of equalization formulae to aid rural areas is more likely than general increases in the level of state aid to public elementary and secondary education. However, metro areas, given their fiscal condition, are likely to strongly resist efforts to allocate funds away from themselves. Policy options that state and local education policymakers should consider include:

- Increased federal funding for public elementary and secondary education.
- Full state assumption of public school funding through flat-grant programs to fund education through local school districts.
- State use of equalization formulas that provide supplemental funds to small school districts to offset higher per pupil costs associated with small schools.
- Use of multiple economic indicators to determine local fiscal capacity for state equalization formulae. Property value measures tend to overestimate rural communities' fiscal capacity relative to urban areas.
- Expanded state categorical grants to school districts that are undergoing enrollment decline to offset both long- and short-term increases in per pupil costs.
- Expanded state funding of transportation programs so that a disproportionate share of rural school funds are not allocated to transportation activities.
- Creation of state capital outlay and debt service programs that provide funds to rural schools that do not have the fiscal capacity to build and maintain school facilities.

How Should Funding for Education be Allocated?

As noted in the introduction, for over a decade national studies have focused on the declining performance of the nation's schools.

The first part of this paper has focused on several aspects of school financing and the potential implications for rural education. Schools have become more costly in both nominal and real terms while performance is perceived to be declining. This section will examine issues in allocating education funds. First, however, we examine aggregate measures of education for general insight into historic school performance trends.

Education Performance

Public education has seen strong growth in real per pupil funding over the past several decades. State and federal regulations and mandates have opened access and established standards for school systems to assure all students receive a socially-acceptable, minimum level of education. Methods of how to assess schools' success in terms of students learning or other education outcomes, however, remain limited. One of the difficulties in assessing the success of American education is lack of criteria to measure how effectively schools have educated students or prepared them for the work place. Imbedded in this evaluation issue is an understanding that work place preparedness is not the only function of public education, nor necessarily the primary function.

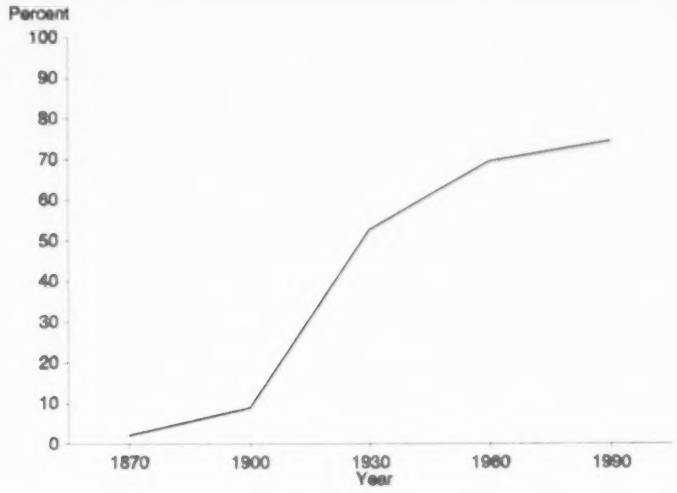
How can the success of the American public education system be measured? Assessing gains in the general education level of the American population is one method of measuring the system's production. In 1870, the 16,000 students who graduated from high school represented about 2 percent of the 815,000 19-year-olds in the United States (Figure 3). This percentage grew steadily through 1968-69, peaking at just over 77 percent. The ratio dropped to 71 percent by 1980 and began a slight increase through 1990. The 2,592,000 students that graduated from high school in 1990 were about 74 percent of the 19-year-old population.

The dropout rate is another measure that is used for evaluating schools' success. Among persons aged 16 through 24 years old, the number of high school dropouts[1] declined from 17 percent in 1967 to 12 percent in 1990 (Figure 4). Blacks appear to have made the greatest gains with the percentage of black dropouts declining from 29 percent to 13 percent. The percentage of the Hispanics population classified as dropouts fluctuated around 30 percent over the 1972-1990 period ending with a 32 percent dropout rate showing little improvement.

Statistics on high school graduation and dropout rates suggest that schools have had mixed success in educating the American population. While the share of black Americans completing high school has increased dramatically, there has been little improvement in the

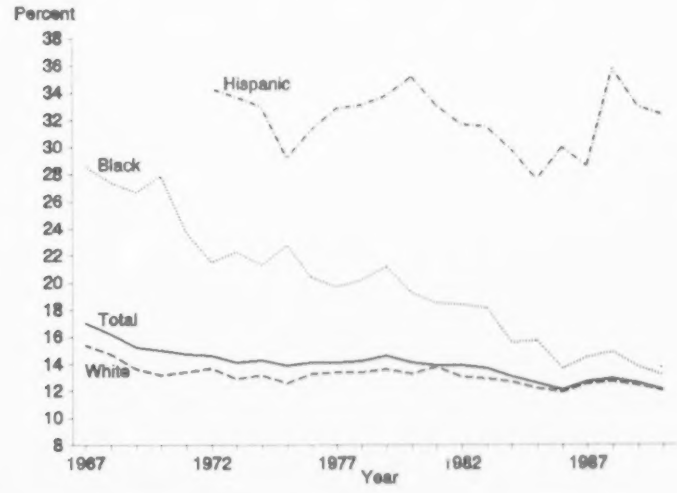
[1]Dropouts are classified as persons not enrolled in school who do not have a high school diploma or GED certificate. Data are based on sample surveys of civilian noninstitutional population.

Figure 3. High School Graduates as a Percent of 17-Year Old Population, 1870-1990



Source: *Digest of Education Statistics*, 1991, Table 95.

Figure 4. Percentage of High School Dropouts Among Persons 16-24 Years Old, 1967-1990



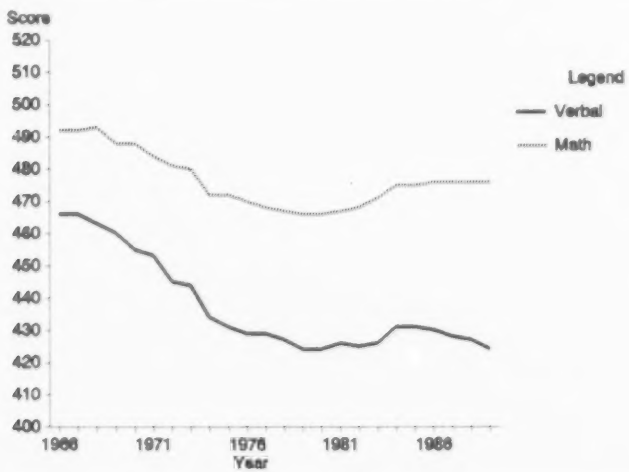
Source: *Digest of Education Statistics*, 1991, Table 98.

number of whites or Hispanics completing education. The percentage of persons in the United States completing high school rose steadily to a plateau of about 75 percent. For the past twenty years the nation has not been able to improve on this share with roughly 25 percent of the population quitting school before completing high school.

High school completion and dropout rates mask issues of education quality and graduates' ability to participate productively in American society upon completion of high school. Completing twelve years of elementary and secondary education does not assure that individuals have developed either the skills or the motivation to be productive citizens.

Standard achievement test (SAT) scores are frequently used as an indicator of student performance with the implication that test scores also measure school performance. Figure 5 shows the historical pattern of verbal and math SAT scores since 1966. Similar data for the decade prior to 1966 shows a fairly stable path from 1956 to 1963 with a sharp decline from 1963 to 1989. The raw data shows a modest upturn starting about 1980. Hanushek attributes a part of the decline from 1963 to 1980 to the increase in number of children per family during that period (Hanushek, 1992, p. 105). This conclusion comes from a study utilizing Iowa Test Scores in which he identified a negative relationship between test scores and family size. Apparently a reversal in family size toward smaller families has had a modest positive effect on SAT scores since the early 1980s.

Figure 5. Average SAT Scores by Subject



Source: *Digest of Education Statistics*, 1991, Table 123.

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The Challenge of Reconciling Conflicting Data

Despite improvements in school inputs such as teachers, school performance does not seem to have improved. Looking at just raw data on student performance and school inputs, many observers would agree with the statement by Hanushek,

> The data on the schooling sector suggests a number of puzzles . . . the constantly rising costs and "quality" of the inputs of schools appear to be unmatched by improvement in the performance of students. It appears from the aggregate data that there is at best an ambiguous relationship and at worst a negative relationship between student performance and the inputs supplied by the schools (Hanushek, 1986, p. 1148).

Schools absorb a large proportion of public expenditures at the local and state level. Through provision of funds, mandates and administrative guidelines, many of the inputs that affect school performance are controlled by state policymakers. Given the nature of the problems involved, the sometimes conflicting nature of the recommendations made to improve the system and frequent conflicting results of studies of the system, how are policymakers and average citizens able to organize this complex information and make decisions that will improve performance and efficiency of the system? What might we as policy educators do that would enable more informed and rational decisions about the system?

One thing we can add to the education debate is a conceptual framework for analyzing the education process. Although many parts of education involve more than economics, economic theory, especially production economic theory, provides a framework for organizing input-output relationships and provides a basis for making decisions about allocating resources to attain desired outcomes. The approach also permits empirical identification of those inputs that may be related to desired outcomes.

All economists (and any student who has taken an introductory economics course) have been exposed to the production function concept. They are familiar with the concept, what goes into it, and how it may be used. Many agricultural economists have used the concept in empirical work in analyses that attempt to measure efficient allocation of resources, productivity of specific resources (inputs) and optimum levels of output.

The production function concept applied to agricultural production, such as corn produced on an acre of land, is quite readily understood. Bushels of corn produced in one production period are considered to be a function of the amount and composition of fertilizer applied, amounts of herbicides and insecticides, machine services, labor, seed and other minor inputs. Specification and measurement of the output is straightforward. The problem becomes somewhat more difficult when it comes to specifying and measuring

the various inputs as well as normalizing for variations in inherent land productivity. Both the conceptual model and its empirical application are well understood by economists.

Specification and estimation of a production function becomes more complex when the concept is applied to education. First, there is no clear conceptual model, as there is for corn production, to guide researchers' specification and estimation of an education production function. Education theory does not tell us how students learn. Second, selection and measurement of both outcomes and inputs must rely on researchers' intuition, prior research and available data. Variables that are chosen do not necessarily measure factors that impact student learning.

Despite these difficulties, the production function approach is appealing because of its immediate application to policy considerations. According to Hanushek, statistical estimates of educational production functions have entered into a variety of judicial and legislative proceedings and have formed the basis for a number of intense policy debates. However, the approach has not been universally accepted, particularly among education decision makers. Hanushek believes the criticism of the approach is in part a reaction against the specific results.

Specification of a general model for education is straightforward. Education outcomes are directly related to a series of inputs from school, household, student, peer and community sources (Levin). School inputs are generally under the administrative control of the school. The "non-school" inputs are generally not. Variables used to measure outcomes and inputs are discussed below.

Output Measures. A number of variables have been used to specify education outcomes for production function analysis. Proportion of youth who complete a given year of education, achievement levels measured by standardized test scores, ability and desire to pursue post-secondary education, ability to exercise responsible citizenship, ability to adjust to changing social and economic demands, and ability to be financially successful in professional careers after school are measures that have been used in research as education outcomes (Deaton and McNamara, p. 8). The breadth and diversity of output measures illustrate the difficulty of settling on one output measure. However, rather than attempt to incorporate multiple objectives into production function analysis, researchers have opted for use of standardized test scores as the indicator of educational outcome. Availability of standardized test scores in contrast to lack of standardized data on the other output measures has been the prime consideration in relying on test score data as the measure of educational outcomes.

School Inputs. School attributes, from school building age and teacher characteristics, to expenditure levels, have been used to

measure schools' production inputs. Researchers have generally used school data available through secondary sources assuming that the data measures production inputs and that differences in the amount and quality of the inputs impact education outcomes.

Teachers are the primary school resource in terms of budget share. Production models have focused on examining their impact on education. It is hypothesized that additional teacher training, a higher proportion of teachers with advanced degrees, increased expenditures for teachers and smaller class size improve both the quantity and quality of schools inputs, thus are expected to have a positive effect on student performance. A review of data on teacher characteristics clearly suggests pupils per teacher have decreased and teacher training has increased.

The teacher corps in elementary and secondary schools has a higher proportion of teachers with more experience than it had twenty years ago. Today, more than one-fifth of all elementary and secondary teachers have twenty or more years of experience. There has been a steady decline in the proportion of teachers with four or fewer years of experience since the early 1970s (Table 1). Median years of experience has increased from nine years in 1966 to fifteen years in 1986, and the proportion of teachers with graduate degrees has more than doubled to 50 percent. Public school teachers' salaries, when measured in constant dollars, increased from 1959 through 1969, leveled off and then declined until the decade of the 80s. Since 1980 teacher salaries have risen significantly (Figure 6). Teachers appear better qualified and are being compensated with higher salaries.

Along with the increase in quality of teacher input, classes have become smaller which should allow teachers to devote more attention to each student with an expected positive effect on student performance. Pupil-teacher ratios in public schools for grades K through 12 declined by 37 percent from 1955 to 1991 (Figure 7), having a significant impact on teacher cost per pupil.

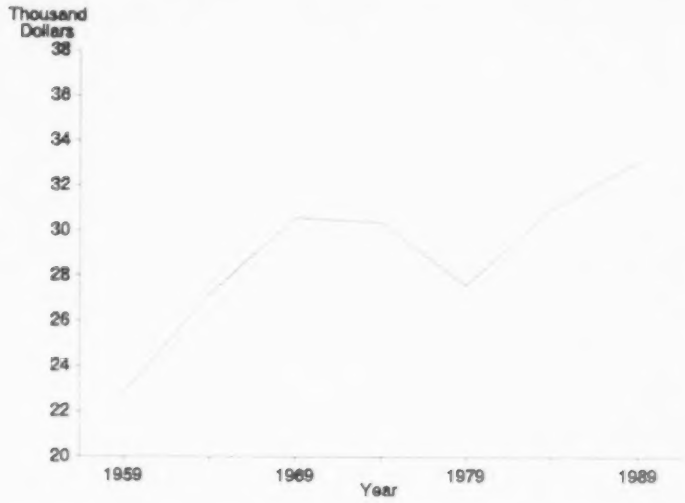
Family inputs tend to be measured by socio-demographic characteristics of families including parental education, income and family size. Peer inputs, when included, are typically aggregate summaries

Table 1. Characteristics of Public School Teachers: 1966-88.

	1966	1971	1976	1981	1988
Teacher Experience	32.2	32.3	27.1	14.1	na
1-4 years (%)	21.6	18.5	14.3	21.8	21.4
Greater than 20 years (%)	9	8	8	11	15[a]
Median (years)	23.3	27.5	37.5	49.6	51.4
Education					
Masters degree or more (%)					

Source: *U.S. Statistical Abstract*, 1982, 1985; *Digest of Education Statistics*, 1991.
[a]1986.

Figure 6. Estimated Average Annual Salary of Teachers, 1959-1990 (in constant 1990 dollars)



Source: *Digest of Education Statistics*, 1991, Table 72.

Figure 7. Pupil-Teacher Ratios, Public Schools, Kindergarten to Grade 12

Source: *Digest of Education Statistics*, 1991.

of the socio-demographic characteristics of other students in the school. These measures are generally used as variables to control for the impact of non-school inputs in studies focusing on the impacts of school supplied inputs.

A summary of selected results from 187 production function studies of education which have been reviewed by Hanushek is presented in Table 2. One immediately notes that only a small proportion of all studies show any of the variables to have a statistically significant effect on student achievement. In several cases in which the variable is significant, the coefficient has the wrong sign.

Table 2. Summary of Estimated Expenditure Parameter Coefficients from 187 Studies of Educational Production Functions.

Input	Number of Studies	Number Statistically Significant	
		+	−
Teacher/pupil ratio	152	14	13
Teacher education	113	8	5
Teacher experience	140	40	10
Teacher salary	69	11	4
Expenditures/pupil	65	13	3
Administrative inputs	61	7	1
Facilities	74	7	5

Source: Hanushek, Eric A., "The Impact of Differential Expenditures on School Performance," *Educational Researcher*, May 1989, p. 47.

The effect of class size as measured by the teacher/pupil ratio was estimated in 152 of the studies. Regression estimates, which held constant family background and other inputs, show class size to be statistically significant in only twenty-seven cases. In thirteen of those cases decreasing class size has a negative influence on student performance.

Teacher education, teacher experience and teacher salary, the three measures presumed to measure teacher quality, show similar ambiguous and often negative results. Teacher education shows a significant effect in only thirteen of 113 studies with five of these cases showing a negative effect. Teacher experience was found to be significant in more of the studies than any other measure of teacher input with fifty of 140 studies showing significance for this input. However, ten of those cases showed a negative relationship. Only fifteen of sixty-nine studies showed teacher salary to have a significant effect on student performance.

Expenditures per pupil are significant in sixteen of sixty-five studies. This measure is closely correlated with teacher education, experience and teacher salary, but is included in many studies as a measure of economic wealth and/or the importance placed on education by the community. Most data do show a strongly positive simple cor-

relation between school expenditures and achievement, but the strength of the relationship disappears when differences in family background are controlled for (Hanushek, 1986, p. 1162).

These studies show only a weak and sometimes inconsistent relationship between teacher quality as measured by education, experience and salary. However, other studies have shown that teacher "quality" does make a difference. Data generated over a four-year period by the Gary Income Maintenance Experiment enabled Hanushek (1992) to use a different approach to relate teachers to student performance. Using an approach equivalent to using a separate dummy variable for each teacher in the sample, it was possible to show that teacher differences have dramatic effects on student performance. A limitation of this approach, however, is that precise characteristics of teachers and schools that are important are not measured, primarily because it is a very difficult task.

Other results that emerge from Hanushek's literature review indicate family background is clearly very important in explaining student achievement. Regardless of how measured, more educated and more wealthy parents have children who perform better on average.

Public schools have no control over family background. They are required to accept essentially all potential students that live within the district regardless of the preparation they have received prior to beginning the more formal learning process. Changes going on in family structures have had dramatic impacts on the amount of preparation (or lack of it) provided to prospective students. Much has been written about the deterioration of the home environment in the U.S. over the past two or three decades. We had three papers at this conference a year ago which dealt with specific aspects of that deterioration. In one of those papers Karen Craig stated, "As the role of parents in supporting learning of children within the home deteriorates, there is an acceleration of risk associated with an optimal education experience which costs the whole society" (Craig, p. 160).

Conclusions

The synthesis of studies using the production function approach leaves little on which to make policy recommendations for improvement of school performance. The most appropriate conclusions focus on what not to do:

- There appears to be little merit for schools to put additional money into lowering class size. This directly increases school expenditures and within a wide range of class sizes no appreciable effects on performance are evident.
- There is little merit in requiring teachers to pursue additional graduate courses merely to meet tenure requirements. There may be merit in additional courses to gain special knowledge in

an additional subject area but more courses in the same area may not translate into improved student performance.

- Since there is no systematic evidence that expenditures are related to performance, policies should not be formulated principally on the basis of expenditures.

The most positive result that emerges from these studies is that teacher quality does matter. Teacher quality, which is inferred to mean teaching skills, positively affects student performance. While there is evidence principals can distinguish good teachers from bad teachers on their faculties through observation, there do not appear to be indicators that can be used to objectively differentiate the teachers. Consequently there are risks associated with hiring of teachers. Once hired, teachers tend not to be rewarded on the basis of observable teaching skills, but rather on scales rewarding time employed rather than merit. For a variety of reasons, the system does not provide school administrators the opportunity to spend marginal dollars in a manner that would encourage higher productivity.

Do such limited, ambiguous and negative results suggest that the quest for a production function for education has led researchers down a primrose path? The debate has been going on for some time. In an article published in 1989, Monk concludes that,

> . . . the presumed existence of the education production function lies at the heart of administrative efforts to improve educational productivity. Second it is not possible to dismiss the existence of the education production function on empirical grounds. Third it is difficult, if not impossible, to dismiss its existence on conceptual grounds. For these reasons, the education production function is well suited to serve as the conceptual base of a policy-oriented research program (p. 34).

Policymakers representing rural schools face serious challenges. On one hand they must work with state officials to assure that state dollars will be available to support rural education as local economies lose the ability to support education through existing tax policy. On the other hand, these officials must insure that school district funds are used effectively and efficiently.

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Domestic Consequences of Evolving International Trade

HOW NAFTA WILL AFFECT AGRICULTURE IN THE UNITED STATES: REGIONAL IMPACTS

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After more than a year of intense discussions, the North American Free Trade Agreement (NAFTA) negotiations were completed on August 14, 1992, in Washington. The result will be the largest free trade area in the world covering all trade between more than 360 million people and economies of more than $7 trillion in Gross Domestic Product (GDP).

Fast Track

Consideration of the NAFTA is subject to the "fast-track" procedures provided by Congress for trade agreements.

The schedule is as follows: Ninety days after the official notice to Congress of the intent to enter into a trade agreement, the president may sign the agreement. In the case of the NAFTA, this notice was on September 18, 1992, so that means late December, 1992, is the earliest the agreement may be signed. Only after signing the trade agreement may implementing legislation be submitted, but there is no deadline for submitting such legislation.

Once the legislation is submitted, it will be entitled to "fast-track" treatment, meaning that Congress will vote "yes" or "no" on the agreement within ninety legislative days. No amendments are allowed. In recent cases, passage has taken considerably less than ninety days because Congress and the administration have collaborated on the drafting of implementing legislation.

Following the above schedule, a Congressional vote on the NAFTA might be expected perhaps as early as the spring of 1993. But no specific deadline can be specified because we do not know when the implementing legislation will be submitted. Clearly this "fast track" is only "fast" by Washington standards.

Although the NAFTA has been negotiated, implementing legislation is required for it to become effective. An intense public policy debate should be anticipated during 1993. This paper is designed to contribute to that debate.

Economic Effects of the NAFTA

The NAFTA negotiation successfully established what will become essentially free trade among the United States, Canada and Mexico. It builds on the 1988 agreement between the United States and Canada by strengthening that agreement somewhat and by adding Mexico to the free trade area. The NAFTA will reduce tariffs to zero for almost all products—both industrial and agricultural. It will improve access for services and investment and improve rules related to intellectual property.

Free trade in North America means faster economic growth in all three countries. There is a broad consensus among economic studies that economic growth rates are likely to increase by around 0.5 percentage points in Mexico and by perhaps 0.1 percentage points in the United States compared to the results with no NAFTA. The reason for the difference in percentage effects between countries is, of course, that the Mexican economy is so much smaller than the U.S. economy. Opening our market to Mexican exports and gaining better access to U.S. exports means much more in relative terms to the Mexican economy.

Improved growth rates translate into increased employment. The analytical studies done on the NAFTA all point to enhanced employment prospects for U.S. workers. An increase in economic activity of $30 billion (about 0.5 percent of GDP in 1991) translates into roughly 1 million additional jobs. On net, we may expect the NAFTA to generate employment growth of roughly this order of magnitude (Office of the U.S. Trade Representative).

This enhanced growth and employment applies to the economy in rural America as it does to the urban areas. It is important to remember that most of the economic activity in rural areas is not in agriculture and, whereas we do not want to underestimate the influence of farming as a core industry, at the same time we do not want to neglect the benefits of the NAFTA in the manufacturing and service industries. The rest of this paper deals with commodity influences but, for rural areas, the general stimulus to economic growth is at least as important.

Commodity Effects

Between the United States and Mexico, all nontariff barriers are converted to tariffs and all tariffs are either eliminated immediately or phased out gradually with transition periods of up to fifteen years. For a few particularly sensitive farm commodities, tariff rate quotas effectively limit imports to some specified amount by introducing a two-tier tariff scheme. The first-tier tariff is set at low or zero rates, but once some pre-specified amount of imports have entered, any additional imports would be subject to a high tariff. These second-tier tariffs are likely to be prohibitive in the early years of the transi-

tion. Gradual market opening is achieved for these commodities by expanding the imports allowed under the low or zero duty by 3 percent each year and by lowering the tariff applied on any additional imports. By the end of the transition period, all tariffs will be reduced to zero (Sumner).

U.S. Department of Agriculture (USDA) analysis indicates that U.S. agricultural exports are expected to be $2.0 billion higher than without NAFTA by the end of the transition. Livestock, meat and grains will account for much of the expansion. Cash receipts in agriculture will be about 3 percent higher compared with projected receipts without NAFTA (U.S. Department of Agriculture, Aug. 1992).

Mexico's main exports to the United States have been tropical and horticultural crops such as coffee, fruits and vegetables. U.S. imports of these products also are likely to expand with the agreement (U.S. Department of Agriculture, July, 1992).

The previous section has outlined the national commodity impacts. More detail on individual commodity results is now available in *Preliminary Analysis of the Effects of the North American Free Trade Agreement on U.S. Agricultural Commodities* from USDA's Office of Economics.

Livestock and Meat. Mexico is one of the fastest growing export markets for U.S. meat, especially fresh/chilled/frozen and processed products.

NAFTA will phase out the 10 percent tariff on U.S. pork entering Mexico, significantly increasing pork exports to Mexico and doubling exports by the end of the transition period. Beef exports to Mexico will expand due to income improvement.

NAFTA will increase live cattle trade in both directions between the United States and Mexico. As constraints such as tariffs, licenses and export taxes are removed, more young cattle from Mexico will be fed in the United States and more U.S. slaughter cattle will be shipped to Mexico. However, Mexican imports and exports will remain small relative to the total U.S. market, so the NAFTA will have effects on total U.S. cattle production and prices.

U.S. poultry exports have increased rapidly in recent years, from $16 million in 1987 to over $110 million in 1991, and Mexican demand is expected to continue to grow. U.S. exports will benefit from the removal of Mexico's import licensing requirement and economic growth in Mexico.

Dairy Products. Mexico is the world's largest market for milk powder and represents the most important outlet for U.S. nonfat dry milk exports. NAFTA will increase Mexican income growth and Mexican demand for dairy products. Overall, NAFTA will allow the United States to obtain a larger share of the Mexican dairy import market.

Cotton. NAFTA will provide an increased export market for the U.S. cotton industry. Although Mexico has been a cotton exporter in the past, it has been a net importer in recent years. Mexico has not filled its quota for imports into the United States since 1984/85. Liberalization will increase U.S.-Mexico trade in textiles and apparel, increasing Mexican demand for U.S. cotton in either raw cotton form or as textiles manufactured in U.S. mills.

Sugar. There is a fifteen-year transition period for sugar. U.S. tariffs on sugar from Mexico will decline by 15 percent over the first six years, and then be phased out to zero over the balance of the transition period. By year seven, Mexico will establish border protection, equal to that of the United States, for imports from third countries.

Under the NAFTA, Mexico retains its current export allocation to the U.S. market of 7,258 metric tons. Any additional access to the U.S. market depends on Mexico becoming a net exporter of sugar. The USDA analysis indicates that Mexico is unlikely to become a net sugar exporter and little impact on sugar trade is anticipated (Sumner).

Nuts, Fruits, and Vegetables. Mexican income growth will increase that country's consumption of fruits and vegetables, thus limiting Mexico's export potential to the United States and expanding the market for U.S. produce in Mexico.

NAFTA will provide increased market opportunities from reduced barriers and income growth in Mexico for U.S. horticultural commodities. The most significant gainers will include fresh apples, pears and peaches. U.S. exports of fresh vegetables to Mexico (counter-seasonal to their production) will also increase as Mexican consumers increase demand for high-quality fresh produce. U.S. tree nut exports to Mexico, already having grown from $8 million to $16 million during 1987-91, will continue to expand as NAFTA eliminates Mexico's 15 to 20 percent tariffs.

Grains and Oilseeds. NAFTA assures the United States access under an initial tariff quota of 2.5 million metric tons into the Mexican corn market. U.S. corn exports to Mexico in 1991, when exports were subject to import licensing requirements, were 1.3 million metric tons. Under NAFTA, as the tariffs are reduced and incomes grow, U.S. corn exports to Mexico will increase steadily over the longer term. NAFTA implies a small increase in U.S. corn prices and production.

U.S. sorghum exports will increase due to the immediate elimination of the sorghum tariff. U.S. wheat exports will increase under NAFTA as a result of the elimination of tariffs and licensing and higher Mexican incomes. U.S. wheat exports to Mexico are expected to grow to 1 to 1.5 million tons per year within a decade.

Under NAFTA, Mexico will reduce its 15 percent seasonal duty on

soybeans to 10 percent, which will then be phased out over ten years. The United States has traditionally supplied three-fourths of Mexico's imports of soybeans and meal. Mexico's demand for grains and oilseeds for feeding is expected to increase as its livestock and poultry sectors expand. The elimination of the seasonal duty will help increase the U.S. share of Mexico's soybean and product imports.

The gain in U.S. corn, sorghum, wheat and oilseed exports is expected to approach an additional 5 million tons per year by the time NAFTA is fully implemented.

Translating Commodity Impact into Regional Effects

Tables 1 and 2 indicate the importance of various commodities in each of the fifty States (U.S. Department of Agriculture, forthcoming). The simplest approach to linking national commodity impacts to how agriculture in each region will likely be affected by the NAFTA is to apply the national impacts to the commodity outputs in each state. However, there are additional considerations.

To consider how some policy or other economic event affects agriculture across regions of the country, it is useful to begin with an evaluation of commodity impacts. To at least a first order of magnitude, knowing what commodities a region produces provides a sense of what the policy change means to the agriculture in a region. That is the basic approach we take for an assessment of the North American Free Trade Agreement.

Of course, some refinements (and perhaps more than refinements) are in order. Commodity definitions need to be specified carefully to assess regional implications of a change in the commodity demand conditions on a national level and, often, significant disaggregation is required. For example, sometimes analysis of U.S. agriculture treats citrus as though it were a single industry. But, the lime, grapefruit, fresh market orange and juice orange industries are quite distinct. They differ in the markets they compete in and in the potential competition from Mexico and elsewhere. They are also different in different regions of the country. For example, the orange industry in California is likely to gain from the NAFTA. California oranges are used primarily for fresh consumption and face little potential import competition from Mexico. We expect export gains for the California orange industry. Little of the crop goes for juice, particularly as a share of total revenue. The Florida orange industry is primarily a juice supplier. The frozen concentrate orange juice produced faces strong import competition, especially from Brazil, but increasingly from Mexico. The NAFTA, by gradually eliminating the existing U.S. tariff (approximately 30 percent *ad valorem* equivalent) will make Mexican juice more competitive in the U.S. market relative to both Brazil and to Florida. USDA analysis indicates that Florida will

Table 1. Cash Receipts for Five Principal Commodities by States, 1991

State	Total Cash Receipts	Commodity	Cash Receipts	Commodity	Cash Receipts	Commodity	Cash Receipts	Commodity	Cash Receipts	Commodity	Cash Receipts
Alabama	2,978	Broilers	1,148	Cattle/calve	646	Grnhs/nurs	200	Peanuts	188	Eggs	167
Alaska	27	Grnhs/nurs	15	Dairy prods	3	Hay	2	Potatoes	2	Barley	1
Arizona	1,890	Cattle/calve	516	Cotton	405	Dairy prods	208	Lettuce	149	Hay	100
Arkansas	4,311	Broilers	1,370	Cattle/calve	520	Soybeans	503	Rice	475	Cotton	441
California	17,887	Dairy prods	2,455	Grnhs/nurs	1,954	Cattle/calve	1,682	Grapes	1,446	Cotton	993
Colorado	3,761	Cattle/calve	2,244	Corn	275	Wheat	208	Dairy prods	166	Hay	161
Connecticut	463	Grnhs/nurs	135	Eggs	82	Dairy prods	71	Tobacco	49	Aquaculture	26
Delaware	620	Broilers	392	Soybeans	45	Corn	37	Grnhs/nurs	34	Dairy prods	17
Florida	6,141	Oranges	1,173	Grnhs/nurs	998	Tomatoes	2/	Cane/sugar	484	Dairy prods	373
Georgia	3,978	Broilers	1,126	Peanuts	631	Eggs	290	Cattle/calve	266	Hogs	209
Hawaii	597	Cane/sugar	198	Pineapples	108	Grnhs/nurs	82	Macad.nuts	35	Cattle/calve	33
Idaho	2,616	Cattle/calve	667	Potatoes	493	Dairy prods	319	Wheat	255	Sugarbeets	211
Illinois	7,509	Corn	2,681	Soybeans	1,958	Hogs	1,172	Cattle/calve	740	Dairy prods	339
Indiana	4,475	Corn	1,237	Soybeans	958	Hogs	824	Cattle/calve	304	Dairy prods	270
Iowa	10,179	Hogs	2,916	Corn	2,466	Cattle/calve	2,057	Soybeans	1,808	Dairy prods	483
Kansas	6,935	Cattle/calve	4,272	Wheat	981	Corn	405	Hogs	323	Sorghum grai	296
Kentucky	3,179	Tobacco	843	Cattle/calve	758	Horses/mules	466	Dairy prods	264	Soybeans	218
Louisiana	1,793	Cotton	388	Cattle/calve	221	Cane/sugar	192	Soybeans	174	Rice	169
Maine	445	Potatoes	109	Eggs	86	Dairy prods	85	Aquaculture	39	Cattle/calve	25
Maryland	1,332	Broilers	384	Grnhs/nurs	197	Dairy prods	182	Soybeans	95	Corn	81
Massachusetts	476	Grnhs/nurs	143	Cranberries	97	Dairy prods	65	Eggs	20	Apples	19
Michigan	3,081	Dairy prods	643	Corn	393	Cattle/calve	285	Soybeans	266	Grnhs/nurs	266
Minnesota	6,936	Corn	1,216	Dairy prods	1,149	Soybeans	1,009	Cattle/calve	978	Hogs	907
Mississippi	2,422	Cotton	685	Broilers	579	Cattle/calve	252	Soybeans	248	Aquaculture	207
Missouri	3,861	Cattle/calve	874	Soybeans	730	Hogs	534	Corn	388	Dairy prods	334
Montana	1,531	Cattle/calve	666	Wheat	406	Barley	156	Hay	74	Sugarbeets	57
Nebraska	8,821	Cattle/calve	4,783	Corn	1,754	Hogs	878	Soybeans	449	Sorghum grai	192
Nevada	276	Cattle/calve	141	Hay	48	Dairy prods	38	Potatoes	15	Hogs	2
New Hampshire	143	Dairy prods	43	Grnhs/nurs	33	Apples	11	Cattle/calve	7	Hay	6
New Jersey	660	Grnhs/nurs	203	Dairy prods	52	Eggs	34	Peaches	27	Blueberries	24

Continued

Table 1. Cash Receipts for Five Principal Commodities by States, 1991—Continued

State	Total Cash Receipts	Commodity	Cash Receipts	Commodity	Cash Receipts	Commodity	Cash Receipts	Commodity	Cash Receipts	Commodity	Cash Receipts
New Mexico	1,501	Cattle/calve	752	Dairy prods	221	Hay	113	Peppers, chil	59	Onions	45
New York	2,868	Dairy prods	1,387	Grnhs/nurs	347	Cattle/calve	208	Apples	133	Hay	72
North Carolina	4,924	Tobacco	1,055	Broilers	777	Hogs	659	Turkeys	431	Grnhs/nurs	295
North Dakota	2,556	Wheat	854	Cattle/calve	497	Barley	213	Sunflowers	191	Sugarbeets	172
Ohio	3,893	Soybeans	767	Corn	761	Dairy prods	592	Hogs	415	Cattle/calve	325
Oklahoma	3,808	Cattle/calve	2,226	Wheat	383	Grnhs/nurs	273	Broilers	189	Dairy prods	152
Oregon	2,454	Cattle/calve	444	Grnhs/nurs	358	Dairy prods	204	Wheat	154	Hay	104
Pennsylvania	3,503	Dairy prods	1,347	Cattle/calve	448	Grnhs/nurs	294	Mushrooms	256	Eggs	222
Rhode Island	71	Grnhs/nurs	39	Dairy prods	5	Eggs	4	Potatoes	2	Apples	2
South Carolina	1,225	Tobacco	191	Cattle/calve	135	Broilers	116	Grnhs/nurs	88	Cotton	87
South Dakota	3,264	Cattle/calve	1,470	Hogs	397	Corn	297	Soybeans	290	Wheat	287
Tennessee	1,978	Cattle/calve	485	Dairy prods	262	Tobacco	210	Cotton	203	Soybeans	186
Texas	12,126	Cattle/calve	6,157	Cotton	1,572	Dairy prods	683	Grnhs/nurs	564	Broilers	509
Utah	731	Cattle/calve	283	Dairy prods	149	Hay	55	Turkeys	45	Grnhs/nurs	26
Vermont	433	Dairy prods	311	Cattle/calve	45	Grnhs/nurs	23	Hay	13	Maple prods	11
Virginia	2,095	Cattle/calve	412	Broilers	305	Dairy prods	269	Tobacco	197	Turkeys	123
Washington	3,947	Apples	800	Dairy prods	558	Cattle/calve	534	Wheat	373	Potatoes	272
West Virginia	330	Cattle/calve	104	Broilers	55	Dairy prods	34	Turkeys	29	Apples	24
Wisconsin	5,449	Dairy prods	2,850	Cattle/calve	924	Corn	349	Hogs	230	Grnhs/nurs	143
Wyoming	813	Cattle/calve	590	Sugarbeets	55	Hay	42	Barley	26	Sheep/lambs	24

1/All cash receipts data are reported in million dollars. 2/Not available.
Source: Economic Research Service.

Table 2. Receipts Shares for Principal Commodities by States, 1991

State	Total Cash Receipts	Commodity	Share	Commodity	Share	Commodity	Share	Commodity	Share	Commodity	Share
Alabama	2,978	Broilers	0.39	Cattle/calve	0.22	Grnhs/nurs	0.07	Peanuts	0.06	Eggs	0.06
Alaska	27	Grnhs/nurs	0.56	Dairy prods	0.11	Hay	0.07	Potatoes	0.07	Barley	0.04
Arizona	1,890	Cattle/calve	0.27	Cotton	0.21	Dairy prods	0.11	Lettuce	0.08	Hay	0.05
Arkansas	4,311	Broilers	0.32	Cattle/calve	0.12	Soybeans	0.12	Rice	0.11	Cotton	0.10
California	17,887	Dairy prods	0.14	Grnhs/nurs	0.11	Cattle/calve	0.09	Grapes	0.08	Cotton	0.06
Colorado	3,761	Cattle/calve	0.60	Corn	0.07	Wheat	0.06	Dairy prods	0.04	Hay	0.04
Connecticut	463	Grnhs/nurs	0.29	Eggs	0.18	Dairy prods	0.15	Tobacco	0.11	Aquaculture	0.06
Delaware	620	Broilers	0.63	Soybeans	0.07	Corn	0.06	Grnhs/nurs	0.05	Dairy prods	0.03
Florida	6,141	Oranges	0.19	Grnhs/nurs	0.16	Tomatoes	2/	Cane/sugar	0.08	Dairy prods	0.06
Georgia	3,978	Broilers	0.28	Peanuts	0.16	Eggs	0.07	Cattle/calve	0.07	Hogs	0.05
Hawaii	597	Cane/sugar	0.33	Pineapples	0.18	Grnhs/nurs	0.14	Macad.nuts	0.06	Cattle/calve	0.06
Idaho	2,616	Cattle/calve	0.25	Potatoes	0.19	Dairy prods	0.12	Wheat	0.10	Sugarbeets	0.08
Illinois	7,509	Corn	0.36	Soybeans	0.26	Hogs	0.16	Cattle/calve	0.10	Dairy prods	0.05
Indiana	4,475	Corn	0.28	Soybeans	0.21	Hogs	0.18	Cattle/calve	0.07	Dairy prods	0.06
Iowa	10,179	Hogs	0.29	Corn	0.24	Cattle/calve	0.20	Soybeans	0.18	Dairy prods	0.05
Kansas	6,935	Cattle/calve	0.62	Wheat	0.14	Corn	0.06	Hogs	0.05	Sorghum grai	0.04
Kentucky	3,179	Tobacco	0.27	Cattle/calve	0.24	Horses/mules	0.15	Dairy prods	0.08	Soybeans	0.07
Louisiana	1,793	Cotton	0.22	Cattle/calve	0.12	Cane/sugar	0.11	Soybeans	0.10	Rice	0.09
Maine	445	Potatoes	0.24	Eggs	0.19	Dairy prods	0.19	Aquaculture	0.09	Cattle/calve	0.06
Maryland	1,332	Broilers	0.29	Grnhs/nurs	0.15	Dairy prods	0.14	Soybeans	0.07	Corn	0.06
Massachusetts	476	Grnhs/nurs	0.30	Cranberries	0.20	Dairy prods	0.14	Eggs	0.04	Apples	0.04
Michigan	3,081	Dairy prods	0.21	Corn	0.13	Cattle/calve	0.09	Soybeans	0.09	Grnhs/nurs	0.09
Minnesota	6,936	Corn	0.18	Dairy prods	0.17	Soybeans	0.15	Cattle/calve	0.14	Hogs	0.13
Mississippi	2,422	Cotton	0.28	Broilers	0.24	Cattle/calve	0.10	Soybeans	0.10	Aquaculture	0.09
Missouri	3,861	Cattle/calve	0.23	Soybeans	0.19	Hogs	0.14	Corn	0.10	Dairy prods	0.09
Montana	1,531	Cattle/calve	0.44	Wheat	0.27	Barley	0.10	Hay	0.05	Sugarbeets	0.04
Nebraska	8,821	Cattle/calve	0.54	Corn	0.20	Hogs	0.10	Soybeans	0.05	Sorghum grai	0.02
Nevada	276	Cattle/calve	0.51	Hay	0.17	Dairy prods	0.14	Potatoes	0.05	Hogs	0.01
New Hampshire	143	Dairy prods	0.30	Grnhs/nurs	0.23	Apples	0.08	Cattle/calve	0.05	Hay	0.04
New Jersey	660	Grnhs/nurs	0.31	Dairy prods	0.08	Eggs	0.05	Peaches	0.04	Blueberries	0.04

Continued

Table 2. Receipts Shares for Principal Commodities by States, 1991—Continued

State	Total Cash Receipts	Commodity	Share	Commodity	Share	Commodity	Share	Commodity	Share	Commodity	Share
New Mexico	1,501	Cattle/calve	0.50	Dairy prods	0.15	Hay	0.08	Peppers, chil	0.04	Onions	0.03
New York	2,868	Dairy prods	0.48	Grnhs/nurs	0.12	Cattle/calve	0.07	Apples	0.05	Hay	0.03
North Carolina	4,924	Tobacco	0.21	Broilers	0.16	Hogs	0.13	Turkeys	0.09	Grnhs/nurs	0.06
North Dakota	2,556	Wheat	0.33	Cattle/calve	0.19	Barley	0.08	Sunflowers	0.07	Sugarbeets	0.07
Ohio	3,893	Soybeans	0.20	Corn	0.20	Dairy prods	0.15	Hogs	0.11	Cattle/calve	0.08
Oklahoma	3,808	Cattle/calve	0.58	Wheat	0.10	Grnhs/nurs	0.07	Broilers	0.05	Dairy prods	0.04
Oregon	2,454	Cattle/calve	0.18	Grnhs/nurs	0.10	Dairy prods	0.08	Wheat	0.06	Hay	0.04
Pennsylvania	3,503	Dairy prods	0.38	Cattle/calve	0.13	Grnhs/nurs	0.08	Mushrooms	0.07	Eggs	0.06
Rhode Island	71	Grnhs/nurs	0.55	Dairy prods	0.07	Eggs	0.06	Potatoes	0.03	Apples	0.03
South Carolina	1,225	Tobacco	0.16	Cattle/calve	0.11	Broilers	0.09	Grnhs/nurs	0.07	Cotton	0.07
South Dakota	3,264	Cattle/calve	0.45	Hogs	0.12	Corn	0.09	Soybeans	0.09	Wheat	0.09
Tennessee	1,978	Cattle/calve	0.25	Dairy prods	0.13	Tobacco	0.11	Cotton	0.10	Soybeans	0.09
Texas	12,126	Cattle/calve	0.51	Cotton	0.13	Dairy prods	0.06	Grnhs/nurs	0.05	Broilers	0.04
Utah	731	Cattle/calve	0.39	Dairy prods	0.20	Hay	0.08	Turkeys	0.06	Grnhs/nurs	0.04
Vermont	433	Dairy prods	0.72	Cattle/calve	0.10	Grnhs/nurs	0.05	Hay	0.03	Maple prods	0.03
Virginia	2,095	Cattle/calve	0.20	Broilers	0.15	Dairy prods	0.13	Tobacco	0.09	Turkeys	0.06
Washington	3,947	Apples	0.20	Dairy prods	0.14	Cattle/calve	0.14	Wheat	0.09	Potatoes	0.07
West Virginia	330	Cattle/calve	0.32	Broilers	0.17	Dairy prods	0.10	Turkeys	0.09	Apples	0.07
Wisconsin	5,449	Dairy prods	0.52	Cattle/calve	0.17	Corn	0.06	Hogs	0.04	Grnhs/nurs	0.03
Wyoming	813	Cattle/calve	0.73	Sugarbeets	0.07	Hay	0.05	Barley	0.03	Sheep/lambs	0.03

1/All cash receipts data are reported in million dollars. Shares based on data in Table 1. 2/Not available.
Source: Economic Research Service.

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be a successful competitor, but the potential for more imports from Mexico does put pressure on the Florida orange industry not shared by the California industry.

Other examples of regional differentiation are the dairy industry, with respect to the share of fluid use, and the wheat industry, with respect to differences in types of wheat. These examples indicate the general principle that, in order to understand regional impacts, one must examine commodity effects at a sufficient level of disaggregation.

Sometimes the geographic placement of an industry is itself important in how the industry fares with a policy change. In the case of the NAFTA, the industries in the Southwest United States anticipate locational advantages through lower cost access to Mexico. Industries located near ports or transport facilities also gain directly. However, to the extent that a commodity in one state has a close substitute produced in other states, it does not matter if a direct export gain is realized.

To illustrate: This summer the U.S. Department of Commerce circulated data showing exports to Mexico by sector, by state. These data indicated the value of goods shipped from each state to Mexico, including agriculture. These data had some obvious errors, but the more important problem was that for most of agriculture, such information tells us little or nothing about how a region or its commodity producers may be affected. For example, there were almost no agricultural exports reported from Indiana to Mexico. But we know that corn, soybeans and hog exports to Mexico are significant nationally and are likely to expand with the NAFTA. Clearly, it does not matter to corn producers in Indiana if the product is shipped from Indiana or Illinois or Iowa. For the corn industry in Indiana, benefits from the NAFTA include higher prices and higher production. The demand curve facing the U.S. industry shifts out.

Finally, commodities also vary regionally in the importance of indirect cross-commodity impacts. In dealing with the feed and livestock industries, economists are accustomed to incorporating effects of supply shifts or demand shifts that apply to one commodity—say corn to other commodities—say from soybeans or hogs. These interactions (particularly on the supply side) are likely to vary regionally. For example, in Idaho, sugar beets compete with potatoes for land, whereas in southern Minnesota, sugar beets and corn are related. The NAFTA is likely to increase the demand for potatoes and potato products and will likely have a small cross-effect on the sugar industry. There will be a larger local effect on sugar supplies in Idaho than in Minnesota. Also, an effect on the demand for sugar, and therefore sugar acreage, would affect the potato industry in Idaho but have much less influence on the potato industry in Maine.

All these examples indicate the care with which regional analysis

should be undertaken. However, the major point remains that the first and key steps are to understand and specify correctly the policy shift itself and to model correctly the commodity impacts on a national basis.

Conclusion

The NAFTA will benefit all regions of the American economy. The gains in rural areas and even for farm families will arise from both increased demand for agricultural commodities and improved economic prospects outside of agriculture.

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INTERNATIONAL TRADE POLICY: CHALLENGES AND OPPORTUNITIES FOR U.S. AGRICULTURE

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The time when farm producers and agribusinesses could ignore the world beyond the county line and hope for a profit is long past. Rapidly changing events such as changes in the geopolitical structure of regions are altering production, consumption and trade patterns. International trade policy is also evolving to reduce subsidies and barriers to trade and, in some cases, create artificial advantages in the global market.

Such actions have already brought challenges of maintaining profitability or basic survival to U.S. agriculture. Producers, agribusinesses and public service and support agencies (including land-grant universities) will be put to the test over the next decade as the world around them forces change. Agriculture and its institutions will sustain themselves, but the forms they take are by no means certain. The purpose of this paper is to identify some of these challenges as well as opportunities available to the U.S. agricultural sector and related institutions.

The key challenges to U.S. trade policy this decade will be to 1) determine the level of "free" trade we are willing to promote; 2) determine what price we are willing to pay for free trade; 3) position our industries for changing opportunities in a rapidly-evolving global market; and 4) anticipate government and multinational power relationships in this global economy.

The major challenges of U.S. domestic policy in the 1990s will be to 1) design domestic price/income support policy tools that pass a General Agreement on Tarrifs and Trade (GATT)-type test of being trade neutral or at least less trade distorting than in the past; 2) move the public social agenda forward to address environmental, quality of life, food safety, and equity concerns without unduly reducing the competitiveness of U.S. producers and firms; and 3) invest in state-level activities that address the localized effects of global events and trade policy.

As trade liberalization is increased through such actions as GATT and the North American Free Trade Agreement (NAFTA), comparative advantage will increasingly determine production decisions, putting some countries in a position to be more competitive than others on certain goods and services. Federal budget cuts will accelerate this change. While such advantages may be natural-resource-based or developed with human capital, infrastructure or institutions, trade liberalization is intended to reduce artificial advantages created by institutional arrangements such as government intervention.

Global Events

The United States is a leading exporter of grain and the export market is likely to remain a significant factor in maintaining/improving conditions in U.S. agriculture. While the U.S. nonagricultural trade deficit continues, various factors have combined to improve U.S. agricultural market share in the global economy, as well as a recent significant improvement in nonagricultural trade. These factors include a depreciating dollar, export support programs, more competitive prices, and bilateral agreements to liberalize trade barriers. The debt crisis of third world countries remains a problem, although some analysts see improvements in sight. There is uncertainty over the potential impact of the European Community (EC) power bloc that became more singular in 1992. Additionally, the geopolitical restructuring in Eastern Europe and the former Soviet Union will change trade flows and make economic predictions even more difficult.

Firm-level competition on a global scale is of increasing importance to agribusiness. Agricultural exports represent one of the few sectors that has maintained trade surpluses during the past two decades. Focusing on value-added products, of which processed meat and poultry are a part, their export value has increased from about 30 percent of total bulk and of value-added exports in the early 1980s to 42 to 45 percent in the late 1980s. In 1989, more than $17 billion in value-added agricultural products were exported. The growth in processed food exports has been tied to economic growth in other countries. Linking this trend with the geopolitical changes in Eastern Europe and the recent and ongoing economic growth in Mexico and

Table I. U.S. Trade Balance, Agricultural and Nonagricultural, Fiscal 1979-1991

	1979	1981	1983	1985	1987	1989	1991
	($ BILLION)						
Agricultural	15.8	26.6	18.5	11.5	7.2	18.1	15.0
Nonagricultural	-41.6	-52.0	-71.3	-134.5	-164.5	-139.8	-107.0
Total	-25.8	-25.5	-52.8	-123.0	-157.2	-121.7	-92.0

Source: U.S. Department of Agriculture

other less developed countries (LDCs) suggests a window of opportunity for firms which have the ability to be competitive.

For example, preferences for meat and poultry in Eastern Europe and Mexico have been growing rapidly. While domestic production experienced similar increases, pork imports to these countries more than tripled during that period. Broiler meat consumption in Mexico has grown threefold from 1973 to 1991. Broiler meat imports for that same period in Mexico is more than 18 times greater. Mexico's beef and veal consumption also grew nearly five times from 1960 to 1991. Mexican beef and veal imports are fifty times greater just since 1973.

While much of Eastern Europe's meat and poultry needs are provided by intra-country trade, consumption has risen significantly there in the past few decades and the potential for competing in market niches remains untapped. Pork consumption in Eastern Europe grew three times from 1960 to 1991. Pork imports for this region are 45 times greater for that period. Eastern European broiler meat consumption increased 12.5 times from 1969 to 1991, while imports grew eight times just since 1975. Beef and veal consumption in Eastern Europe expanded more than two times from 1960 to 1991, while imports grew nearly three times for the same period.

The explosion in preferences for meat and poultry in these countries indicates real potential for competitive processors. As these countries reorient their economies and begin to experience increases in discretionary income, export companies can position themselves for opportunities if the policies of those countries maintain an open trade door.

Companies/products that are likely to benefit from EC92 include raw commodity and processed products from food and feed grains, dairy, peanuts and tobacco. The uncertainty with the beef and poultry markets will depend upon the EC policies and attitudes regarding animal rights and chemical additives. U.S. producers may have to decide between playing by EC rules or walking away from that market. Large corporations such as Cargill and ConAgra that can make such shifts and manage a European marketing strategy are likely to benefit. Individual producers may find increased opportunities for contract marketing of tailored products such as organic crops or chemical-free meat. The Japanese models of joint ventures and investment in progressive European food and fiber processing firms with continental distribution networks may also pay off, although the short-run impacts on the U.S. trade deficit could be troublesome.

Recent Trade-Related Actions

The Food, Agriculture, Conservation & Trade Act of 1990 (FACT90) was a unilateral action by the United States that moved the United States closer to what it had hoped other countries would

agree to in GATT negotiations. Mandated flex acres for commodity program participants reduced the potential price and income support and increased the opportunity for producers to get market signals more directly. Relaxed rules for buffer stocks policy (the Farmer-Owned Reserve) also offer increased opportunity for market-, rather than government-induced, decisions. FACT90 generally continues the unilateral market-oriented move which began with the 1985 farm act.

Examples of multilateral policy include the U.S.-Japan Beef and Citrus Agreement, the U.S.-Canada Free Trade Agreement, NAFTA, the European Common Market and EC92, and GATT. Such institutional arrangements that result in liberalized trade rules can bring consumers lower prices or producers higher prices, a greater variety of goods, improved quality of products, improved resource allocation, a loss of some producers and related agribusiness, expanded business opportunities for firms, tax relief for the general public, and overall expansion in economic growth and income.

While multilateral negotiations are most often conducted to reduce distortions to trade, that may not always be the case. For example, countries may form trade blocs to counter market power of other countries or blocs. The trade bloc may reduce barriers to trade within the bloc, but maintain or increase barriers between the bloc and other countries. Some analysts have suggested the Single European Act of 1992 (EC92) will maintain/increase barriers for non-EC countries—the so-called "Fortress Europe" concept. The NAFTA will likely not result in a "Fortress America," although there will be more favorable terms of trade among the United States, Mexico and Canada. Ironically, the countries that are warning of a "Fortress America" are the same countries (notably Japan and the EC) that are reluctant to accept U.S.-Gatt proposals similar to NAFTA.

Quotas, embargoes, quarantine regulations and a host of other nontariff barriers will remain in the agricultural sector, but probably at reduced levels. Even so, as tariffs are lowered and quotas removed, the frequency with which sanitary and phytosanitary regulations are used to restrict trade are likely to increase. The reduction of nontariff barriers, especially health and phytosanitary regulations, is a major task for upcoming negotiations.

Under NAFTA, lower tariffs in Mexico are likely to especially benefit U.S. high-quality beef and poultry, dairy products and wood products. Duties on one-half of all U.S.-Mexico agricultural trade will be eliminated immediately. Other tariffs will be phased out over a five- to fifteen-year period. Most U.S. imports of feeder cattle come from Mexico. Mexico is the second largest buyer of U.S. meats, although there is a Mexican tariff of 10 percent to 20 percent on pork. Beef enters the Mexican market duty free. Much of these exports to Mexico are composed of offal, with boxed beef and fresh, chilled or frozen meat expanding in recent years. Meat purchases by

Mexico would likely increase with NAFTA. More Mexican feeder cattle may move into the United States, having a marginal effect on U.S. feeder cattle producers. Mexican purchases of U.S. dairy cattle will likely increase.

Harmonization of health and sanitary regulations would increase trade flows, while maintaining an agreed-upon standard of safety. In 1990, the Mexican government began a three-year program to phase out the feeder cattle export tax, which was eliminated on September 1, 1992. There are some differences regarding the impact of these cattle movements. The United States imported just over one million Mexican feeder cattle in both 1990 and 1991, while imports were 30 percent below those levels for the first six months of 1992. Most of the feeder cattle end up in feed lots in southwest Texas and the southern plains of Texas and Oklahoma. In 1990 and 1991 fewer than 160,000 head were returned to Mexico for slaughter. If these feeders displace feeders coming from U.S. cow-calf operators, that domestic activity will shrink somewhat as producers experience lower prices and returns. It has been estimated in a recent study at Texas A&M University that Mexican feeder imports actually lowered prices by $.07 per pound for a 500-pound steer in 1990. The feeders that are light enough to go as stockers onto wheat pasture are a benefit to rental rates and hold stocker prices down.

Grains and oilseeds account for about two-thirds of the tonnage of U.S. agricultural exports to Mexico. Mexican import licenses or quotas on most U.S. exports will be terminated with NAFTA. Both countries also have domestic farm programs that affect trade. NAFTA requires no restrictions on domestic farm programs and essentially does little to reduce export subsidies. The lack of good arable land puts Mexico at a comparative disadvantage. U.S. agriculture has the advantage in natural resource base, marketing/distribution infrastructure and agribusiness support. U.S. processors are typically larger and lower cost producers than Mexican processors. Although Mexican processors have access to cheaper labor, labor is typically a small percentage of production costs. Too, U.S. processors are usually more efficient than those in Mexico. Poor rail and storage infrastructure also harms Mexico's competitive position.

A common problem that occurs in the negotiation and implementation of trade agreements is the compromise to assure a balance with which countries with different political agendas and constituencies can live. For example, there are concerns among U.S. wheat and livestock interests that the NAFTA will sell them short for gains in other sectors. The wheat and livestock industries fear that Canada will be allowed to continue transportation subsidies that permit the Canadians to compete at Mexican border prices. The livestock industry also has a concern about rules of origin. The potential for serious competition from the Mexican livestock sector is marginal at best, but could be enhanced if cattle could be imported from other

Latin American countries. However, this alternative also has limited potential given the high incidence of aftosa and other tropical insect and disease problems, along with higher transport costs.

A study partially funded by the American Farm Bureau, and completed prior to agreement, shows a NAFTA could bring U.S. gains in grains and oilseeds; livestock products including low-cost process meats, edible offal and high quality beef and pork, cattle and hogs; dairy products; processed cotton through textiles; forest products; seasonal fresh vegetables during spring and fall; selected fruits. U.S. losses may come in apparel, fruits and vegetables. U.S. Department of Agriculture (USDA) studies of a NAFTA show U.S. gains for grains, oilseeds and most livestock and products.

The U.S.-Canada FTA allows increased access to Canadian markets for fresh fruits and vegetables, poultry and eggs, and wine and distilled spirits. U.S. beef producers will see more gains, if Canada is forced to reduce transportation subsidies, thus improving the U.S. competitive stance. There is some speculation by U.S. wheat industry spokesmen that there has been and will continue to be some adverse impacts to U.S. wheat producers, at least in the short run.

The 1988 U.S.-Japan Beef Citrus Agreement improves access to the Japanese market. Since then, beef sales to Japan have more than doubled. Market access for fresh oranges was expanded to 22,000 tons by 1991 and thereafter allowed open access subject only to a 20 percent tariff. Reductions in tariffs on grapefruit, lemons, frozen peaches and nuts have occurred since then. The increased export demand has helped support domestic prices in the United States.

State and Regional Impacts of Multilateral Trade Liberalization

In one of the few studies of regional impacts that has yet been conducted, Sigalla evaluates agricultural sectors by state based on the level of protected and supported commodities. Assumptions of the study include:

- Subsidy and protection policies distort prices and result in resource misallocation, but cuts could push prices and output in different directions with uncertain outcomes.
- Reductions of subsidies and trade barriers would cut food costs and increase gross domestic product; while farm prices would increase in the short run, increased efficiency from long-run competition would mitigate price increases.
- Comparative advantage would rule specialization decisions, changing key production areas.
- Freer trade would increase the cost of production for formerly subsidized enterprises.

Sigalla's analysis is based on the findings of Roningen and Dixit that freer trade would bring much change in the composition of U.S. production and little in aggregate output. Sigalla uses the value of state agricultural production in 1987 multiplied by Roningen and Dixit's expected changes in income from free trade. The Sigalla results do not necessarily agree with other studies that have been conducted more recently, especially for NAFTA.

Commodity impacts include the following: Income falls for food and feed grains, sugar, dairy, cotton, rice, soybeans and possibly vegetables. Income from livestock, and possibly most fruit, would increase. Farm income would decline in most states, with the greatest declines in states that are major producers of sugar, rice or other program crops. If, however, 60 percent or more of the state's agricultural income comes from livestock production, there would be little or no negative impact and some states would see net gains.

In the Sigalla study, fourteen states that would reduce agricultural income significantly are major producers of program or protected crops (e.g., sugar cane, sugar beets, etc.) and low livestock production. Declines greater than 20 percent in agricultural income would occur in Hawaii, Louisiana and North Dakota. Crop income losses would overwhelm livestock gains in North Dakota and Montana.

Six states that would see little or no effect on agricultural income are Kansas, Massachusetts, New Jersey, Oklahoma, Rhode Island and Virginia. Livestock income accounts for more than 60 percent of agricultural income in Kansas and Oklahoma. While program crop income would decline, increased livestock income would compensate.

Six states with significant livestock sectors could benefit from freer trade: Colorado, Nevada, New Mexico, Utah, West Virginia and Wyoming. The remaining twenty-four states derive less than one fourth of agricultural income from program crops, but the livestock incomes of most are also not large. Their incomes would drop 2 percent to 6 percent. The states that do have significant livestock incomes (Nebraska, South Dakota, Texas, Iowa, Missouri) will have their gains offset with large program crop income losses.

Income losses in the agricultural sector are not likely to cripple any state's economy. As resources move to other sectors, increased efficiency will mitigate losses. Most nonagricultural sectors will benefit, but the nonagricultural sectors tied to program crops will face declining incomes (i.e., cotton ginning, grain processing, apparel, transportation, warehousing, insurance and retailing).

While the results of this study are quite dramatic and thought provoking, at least two important caveats need to be mentioned. Quantitative studies of trade liberalization often are on shaky ground because the parameters of those studies were generated from historical data and relationships over periods of non-free trade, distorted

by governmental intervention. No one really knows what economic relationships would result from free trade in agriculture since it has never existed. Second, the Roningen and Dixit study used 1986 as the base year which reflects the highest level of support to U.S. agriculture on record. Certainly any major reduction in support would be grossly overstated by the study.

Additional studies of trade liberalization are urgently needed because there are numerous global events with short- and long-run impacts on U.S. agriculture. Some of the more notable examples include geopolitical change in the former Soviet Union and Eastern Europe. Third World debt, Hong Kong '97, destabilized Eastern Europe, Mideast tensions, African nations in political and resource-shortage turmoil, and China facing a future with a new generation of leaders. The pent-up demand in Eastern Europe and the Commonwealth of Independent States (CIS) in the short run will likely force efforts to rebuild infrastructure and provide basic needs. U.S. agriculture will benefit from this activity. Assistance will be a drain on Western resources, especially Germany, the EC, United States and Japan.

In the long run, developments will help these countries become stronger customers and make them more competitive in some agricultural production. The key questions will relate to the level of protectionism, the extent of participation in the EC, speed of economic reforms and inter- and intra-country stability.

Less developed countries (LDCs) were the fastest growing market for U.S. wheat and feed grains exports in the 1970s. However, LDCs built up debt far in excess of their ability to repay. The USDA has estimated exports to debtor nations for 1990 in excess of $530 billion (1982 dollars). If there were no interest payments on debt, exports could be as high as $900 billion for the same period, according to the USDA. Thus, the indication is that real growth, coupled with debt reductions in LDCs, will strengthen U.S. export sales, especially in agriculture. The USDA study specifically indicates U.S. agricultural exports are down about $3 billion per year since 1982 because of the debt problem. In other words, agricultural exports could be as much as 8 percent higher if the debt crisis were not in existence.

Domestic Policy

The United States is not a free trade nation. Section 22 provisions apply import quotas for dairy, cotton, sugar and peanuts. The United States also uses nontariff barriers such as quotas and health and safety standards. Periodically formal quotas are instituted on commodities such as beef and peanuts to protect domestic producer prices. The United States has also made use of informal quotas for such goods as Japanese automobiles by only suggesting limits on imports, known as voluntary export restraints (VERs). Health and safety standards have taken on increasing importance in recent years.

The federal government both subsidizes and restricts U.S. domestic industries. Subsidies come in the form of tax breaks and incentives, price and income supports and public-funded research and development. Restrictions that can be imposed on U.S. domestic industries are seldom done to affect trade (i.e., pesticide regulations and animal welfare and control for agriculture, banning export of high technology for defense). Nonetheless, whenever the government, albeit with good intentions, imposes minimum wages, fringe benefit requirements, health and safety standards, environmental standards, etc., the cost of goods and services increases. In a global market in which competition is keen and profit margins slim, foreign producers and firms may not have the same domestic restrictions. Such policies may have the unintended consequence of shifting the comparative advantage away from a U.S. firm to the foreign firm.

Yet another type of domestic policy that affects trade is export market subsidy. The most prominent in agriculture are credit guarantees, the Export Enhancement Program (EEP) and the Market Promotion Program (MPP). These are typically provided on a case-by-case basis to enhance U.S. competitiveness, recapture lost markets, develop new markets or offset trade barriers. Credit guarantees have been offered to LDCs and to the Commonwealth of Independent States (CIS). EEP is usually offered to reduce the net cost of the product and, most often for bulk commodities, to make it more competitive with the EC or Canada when they have subsidized their sales below market prices. MPP provides assistance for potential exporters to explore and develop foreign markets. Export support programs, such as EEP and MPP will face even tougher challenges, not only because trading partners perceive them as unfair trade policy, but because some U.S. political interests see them as unnecessary, expensive and misdirected.

Domestic policies that are not directly linked to trade have come under scrutiny for their apparent adverse impact on trade. U.S. loan rates and deficiency payments for farmers in government programs have been challenged by other major exporters because they can be used to manipulate production levels and prices. The same can be said for some aspects of the EC Common Agricultural Policy.

As protection of certain commodities is removed, prices are likely to fall internally and increase the potential for growth in demand. Such price declines, when linked with possible cuts in federal price and income supports, will affect marginal producers more adversely than others. That is what efficiency means—forcing less productive resources out of their current use. Studies often support the case that net benefits to society as a whole are worth moving toward freer trade. But it may be difficult to compensate individuals and groups that lose their livelihood and are forced to relocate, retrain or remain in business but see real wealth gains wiped out.

Responses to Challenges

Regaining market share for the U.S. grain industry and expanded livestock markets will not be beneficial to all producers and agribusiness. Those who could not operate status quo without subsidies would be forced to adjust. Adjustment could take many forms: selling out, changing enterprises or enterprise mix, changing size to a larger or smaller operation, renting land rather than owning it, changing other factors of production such as fertilizer and chemical use, changing their holdings or financial portfolio, or cooperative ventures.

Domestic policies discussed to this point have been conducted at the federal level. There are also important state policies to facilitate improved situations for local producers and such policies will not be restricted by any international trade pacts. Given the probable impacts of pending trade policy and global events, they may be especially useful in the transition.

Potential state support includes: 1) management training; 2) international market development; 3) incentives for state- regulated lenders to support innovation, product and market development; 4) maintain/increase support for research and extension efforts to improve efficiency, capitalize on comparative advantage and extend these developments to trade-oriented producers and agribusiness; 5) improve efficiency of state-supported efforts both within the state and among other states through coordination and sharing of information when mutually beneficial.

Where a lack of private incentive exists, state policy can be targeted to reduce risk; encourage processing/marketing cooperatives; provide training through seminars and higher education coursework; provide short-term expertise or institutions from the state itself; identify trends and future needs. Planning based on such information could give the state's producers and agribusiness the edge in future export market share as well as in finding domestic niches or alternatives. Such activities are only the beginning of an expanded role for state assistance.

The primary challenges of the 1990s for producers and businesses in U.S. agriculture will be anticipation of sector impacts from the major geopolitical changes around the globe, accepting the dual trends to liberalize trade and provide less expensive governmental buffers for those affected, and learning to be flexible and adaptable. The land grant university has an educational role in that process that demands creativity, quality and sensitivity. Whether the land grant system has the expertise and resources to meet the challenge remains to be seen. The public has a role to recognize the importance of continuing the investment in such institutions and the necessary collective will to follow through with that support.

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SOCIAL INDICATORS, BASEBOOK, BASELINE AND INDICATOR MODEL

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This paper is about the implementation of a basebook, with social indicators plus a modeling and intellectual interface process for downstream projections (baseline) for rural communities. It is based on several meetings with researchers in the Rural Policy Research Institute (RUPRI) plus Glenn Nelson's social indicator paper of September, 1991.

At this juncture, it may be helpful to define some terminology that filters through from the Food and Agricultural Policy Research Institute (FAPRI) experience. *Basebook* often refers to our historical data series that feeds model development and serves as a basis for other analysis plus projections. *Baseline* refers to our base ten-year set of projections that generally hold government policies constant. It is the base of reference from which all measured alternatives will be compared. Considerable effort is put into this project by FAPRI researchers. For instance, a ten-year preliminary baseline is usually developed in mid November. This takes about three weeks of preparation and one intense week of analysis with Iowa State, Texas A&M and the University of Missouri convening at one location. This is an interactive process whereby Missouri handles the domestic agriculture scene; Iowa State, international; and Texas A&M, representative farms. About seventy-five people will come to Kansas City, Missouri, in January to review this baseline. This process takes about one and one-half days. FAPRI researchers review each commodity with at least two outside respondents—the audience is also invited to comment.

The following week a new baseline is developed, conditioned on comments from this expert panel of reviewers. This process is designed to communicate to all policy staffers and analysts our best guess about probable downstream consequences for world food and agriculture policies that may be considered to avert projected pressures.

Many of the thoughts that follow, as you might expect, are conditioned on FAPRI experiences—so these biases are admitted up front. From this perspective, two things are crucial: 1) that we place a healthy portion of our focus on a downstream process and 2) that

considerable effort is devoted to a process that insures broad interaction. Since modeling and theory lag in many relevant areas, it will be necessary to establish a process that interfaces from fifteen to thirty experts across major subject areas. Models hopefully can be developed, but the issue here is to harness a broad collection of our colleagues and get a consensus statement on where we are headed over the next ten years, based on a reasonable set of assumptions that may include a baseline economic forecast plus no change in public policy.

To achieve these two objectives the following steps are suggested:

- Develop policy objectives for the rural community.
- Identify relevant indicators that adequately reflect each objective.
- Select internally consistent indicators that can be used to estimate social cost.
- Construct quantitative models to support the longer-term process.
- Develop an interaction baseline process that moves indicators out over a ten-year horizon.
- Identify and react to priorities from the policy environment.

Desired Objectives

We must have a target at which to shoot and a standard of measure that helps focus desired directions. We tend to breathe a sign of relief when unemployment is in the 2 to 3 percent range, but become alarmed at numbers above 6 percent. It may not be necessary to be this specific in our base set of objectives; however, it must be clear whether we have a problem, do not have a problem or are in a zone of concern. At issue are the appropriate categories that communicate the desired objectives for rural policy. Glenn Nelson suggested a set of categories plus some possible indicators. His categories serve nicely as a vehicle for deriving a set of objectives for rural committees.

The question posed is whether we can take these categories and move to *desired objectives for rural policy*, similar to the objectives used in farm policy. As an example, farm policy objectives are generally stated in the following fashion:

Table 1. Farm Program Policy Objectives

(1) **Income** - Maintain adequate net farm income for livestock and crop producers
(2) **Food** - Maintain an adequate food supply at reasonable prices to consumers
(3) **Exports**—Maintain a competitive trade position
(4) **Reserves**—Maintain adequate food reserves or stocks
(5) **Environment** - Enhance environmental quality
(6) **Conservation** - Enhance conservation practices
(7) **Inputs**—Maintain a viable input industry
(8) **Government Costs** - Achieve all objectives at the least government cost

In this case, there are eight categories with broad sets of objectives—very loose—implying wide ranges for quantification of success or failure. Assessment of the current farm policy environment is generally conveyed in three basic categories: acceptable, some concern and major pressure. Most of our presentations in Washington, D.C. have relied on a color scheme to convey this message: green—acceptable; yellow—concerns; and red—major pressure. I would judge the current situation as reasonably favorable with downstream concerns. Based on our latest ten-year run, the color code illustrated in Figure 1 is most likely.

Figure 1. Color-Coded Assessment of Current Farm Policy Environment

Farm Policy Indicators	Current Situation	Five Year
Farm Income	Green	Yellow/Red
Food	Green	Yellow
Exports	Yellow	Yellow
Reserves	Red	Yellow
Environment	Yellow	Yellow
Conservation	Yellow	Green/Yellow
Input Industry	Yellow	Yellow
Government Cost	Green	Yellow

Note the objectives reflect different priorities that compete with each other. Also note it is fairly easy to move toward an assessment of the current situation. For judgmental purposes, plenty of indicators are available from the U.S. Department of Agriculture (USDA), the Congressional Budget Office (CBO), the Office of Management and Budget (OMB), private sources and FAPRI. While pressures exist in specific areas such as dairy and sheep, the agriculture industry is doing fairly well; however, the number of "yellow" categories spells trouble down the road.

Social Indicators for Rural America

Nelson suggested sixteen categories, as shown in Figure 2, which serve as a starting point. A first pass at Nelson's categories by Jim Scott, Shirley Porterfield and I resulted in approximately the same

Figure 2. Nelson's Rural Policy Indicator Set

Demographics	Public Safety	Income
Family Structure	Housing	Net Worth
Households	Environment	Public Services
Accessibility	Employment	Public Perception
Health	Production	
Education	Earnings	

set. We combined two categories and added two other focus areas, *Poverty*, and *Leadership*, as shown in Figure 3.

There are many logical combinations that easily convey the message about social objectives in the nation, region or community. Since my interest is model oriented, part of this flow reflects a possible sequencing wherein the information from the upper tier is useful in the lower tier. However, some tinkering with the process suggests a system that is more simultaneous than sequential or recursive. For this reason, the sequencing may be more of a communication vehicle

Figure 3. Social Indicator-Consolidation Reflecting General Economic and Policy Interface

1. Economic
- Employment
- Income
- Net worth
- Production

2. Public Service
- Per capita spending
- Tax rate
- Tax capacity

3. Poverty
- % living under poverty level

4. Health
- Cost
- Infant mortality
- Drugs
- General health
- % with health insurance
- Ratio of cost per age group

5. Education
- Drop out
- Expenditure

6. Demographic
- Population growth
- Population density

7. Households
- One parent family
- Number
- Size

8. Housing
- Cost
- Adequate space

9. Accessibility
- Distance

10. Public Safety
- Victimized

11. Leadership
- Balance
- Growth
- Attitude

12. Social Cost
- Health
- Education
- Housing
- Public safety
- Transportation
- Crime
- Welfare
- Other public services

than a modeling issue. If the system is simultaneous, then it does not matter which equation is placed in the system first, second, etc.

The following categories and ordering are also an attempt to bring "under one roof" all of the variables associated with the general economy. If this can be achieved in a reasonable fashion, it will be possible, for example, to hook into ten-year projections made by econometric units such as Wharton and DRI on a regular basis. My suspicion is that we are going to find that a good deal of the variation in many of the data series reflecting major categories will be highly correlated with, and influenced by, the general economy. At any rate, longer term projections will have to be conditioned on economic and political events. So a baseline (ten-year projections) will require a forecast of general economic variables plus enough knowledge of policy variables to decide on a baseline run.

To stick my neck out further, I have constructed a first pass at a broad set of rural policy objectives, they are strongly conditioned on the general objectives mentioned previously for farm policy. Certainly, we need to be comfortable with these broad targets—at least to the extent that we can communicate the current situation and possible downstream consequences.

This final step is the general focus of Step 1, Develop Rural Policy Objectives.

Table 2. Rural Objectives

(1) **Economic**—Reasonable opportunity for employment and an adequate income
(2) **Public Service** - Adequate funding and funding base
(3) **Poverty** - Maintain adequate programs to deal with short-term and long-term problems
(4) **Health** - Maintain a reasonable opportunity for accessibility and availability of food and medicine
(5) **Education**—Maintain a reasonable opportunity for an adequate education
(6) **Demographics** - Maintain an adequate environment-space for growth and development
(7) **Households**—Adequate family structure for growth and development
(8) **Housing**—Adequate space at a reasonable price
(9) **Accessibility** - Reasonable transportation at adequate distance from basic services
(10) **Public Safety** - Reasonable safety and security
(11) **Sustaining Leadership** - Viable public and private leadership base to sustain short-term and longer-term balanced growth
(12) **Social Cost** - Maintain all objectives at the least social cost

Accomplishing this task makes it possible to *communicate* downstream consequences. Without this vehicle, it is going to be difficult for us to assess whether the complete package is moving in a more or less desirable direction. To reinforce this point, I will take these objectives a step further by attempting to evaluate the current situation for the United States, the state of Missouri and the city of Columbia (Figure 4). The next step would be a comparison of where we expect to be in five years, then ten. If these directions can be established, then we have a base (baseline) of reference for further evaluation.

Figure 4. Current Social Indicators Situation

Social Indicators Current Situation for the Nation, State, and the City of Columbia-Abner's Best Shot

	National	State	Local
Economic	Yellow	Yellow	Yellow
Public Service	Yellow	Yellow	Yellow
Poverty	Red	Yellow	Yellow
Health	Red	Yellow-Red	Yellow
Education	Red	Yellow-Red	Green
Demographics	Yellow	Yellow-Red	Green
Households	Yellow	Yellow-Red	Green
Housing	Yellow-Red	Yellow-Red	Green
Accessibility	Yellow-Red	Yellow-Red	Green
Public Safety	Yellow-Red	Yellow	Green
Sustaining Leadership	Yellow	Yellow-Red	Green
Social Cost	Red	Red	Yellow

** I have noticed that the Governor of Colorado is using this strategy in making comparisons between the United States and other developed countries. We rank No. 5 in many of his categories--tends to convey the mesage, albeit in very broad terms.*

To reinforce the importance of this exercise, we have an ongoing series of debates conducted by David Webber in the Political Science Department at the University of Missouri that interfaces faculty with state staff and legislators. In one of the recent meetings, a senior staffer from Jefferson City expressed the frustration of having many objectives with no consensus and being generally at cross purposes. So, again, it seems to me a first hurdle in dealing with this

problem is consensus on the set of categories that reflects rural policy objectives so we can communicate where we think we are and concentrate on where we best want to go "at the least cost to society," but at the highest expected gain.

Identify Relevant Indicators for Each Objective Area

An additional constraint will be to select, wherever possible, indicators for which we can obtain historical data on at least a quarterly or annual basis. An objective is to ascertain a set of indicators for which historical data would serve as a stepping off point for downstream estimation. This carries the process into a second phase during which an historical basebook is complemented by a corresponding set of projections. As Nelson has suggested, it would be worthwhile to canvass a larger group, possibly in a workshop setting that facilitates the historical basebook process.

This paper, hopefully, is a bit of a warm up for such an exercise and, at the same time, will help to condition our thinking around a set of downstream estimates that move toward understanding social costs and benefits.

From a modeling perspective, it would be useful to have about ten indicators for each selected category. Obviously, there are many more that should reside in the basebook, but an indicator model will probably be restricted to one or two indicators per category on the first pass. Certainly, these models will become more sophisticated over time. The issue here, from a modeling standpoint, is to select indicators that the public can easily identify and, at the same time, will be useful in guiding our thinking relative to longer term measured consequences.

Since Nelson has made a first cut at such a set, most indicators below reflect his suggestions. I have taken the liberty of rearranging—with logical sequence and flow again being a primary concern. As Nelson suggested, this process may help stimulate discussion that complements the basebook set of indicators. Certainly, a broader canvassing will be necessary; however, since my concern involves a first pass at the model specification, best guesses at this point will be extremely helpful. Following Nelson's lead primarily, his suggested set of indicators are included.

Also, to help facilitate this process, I have listed each category with a summary of Nelson's suggested indicators. We will be working continuously on data development for the basebook; but, from my perspective, we need indicators that the public can relate to and for which continuous historical data is available. My selection, based primarily on the 260 variables suggested by Nelson, is shown in Table 3.

To reiterate, the macro modeling activity can utilize, at most, two to three indicators per category as dependent or endogenous vari-

Table 3. Possible Indicators for Rural Policy Objective Categories

1. ECONOMICS

- Labor
  - ▲ total employment
  - ▲ unemployment rate
  - ▲ labor force (participation rate, and working age)
  - ▲ labor force (participation rate by sex)
  - ▲ rate of change in job
  - ▲ employment by occupation group
- Income
  - ▲ total personal
  - ▲ per capita personal
- Earnings
  - ▲ 13 major sectors
  - ▲ per job, 13 major sectors
- Net Worth
  - ▲ percent of population (most to least wealthy)
- Production
  - ▲ total gross product
  - ▲ per capita gross product
  - ▲ gross product (value-added)

2. PUBLIC SERVICE

- Tax Rate
- Tax Capacity (percent of population living in poverty)
- Per Capita Spending
  - ▲ schools
  - ▲ health
  - ▲ housing
  - ▲ welfare
  - ▲ crime prevention
  - ▲ transportation
  - ▲ sewage/water

3. POVERTY

- Incidence of Poverty
  - ▲ % of counties with 20% in poverty

4. HEALTH

- Insured and Uninsured (percentage)
  - ▲ cost per capita-insured
  - ▲ cost per capita-uninsured
- Infant Mortality Rate
- Child Death Rate
- General Health Conditions
- Drug Abuse
- Expenditures by Age Group
  - ▲ first year of life
  - ▲ last year of life

5. EDUCATION

- Per Capita Public Expenditures
  - ▲ primary and secondary
- Public Expenditures for Primary and Secondary
  - ▲ per student
- Achievement
- Drop-out Rate
- Years of School Completed by Adults

6. DEMOGRAPHICS

- Total Population
- Population Growth Rate
- Population Density
  - ▲ per square mile
- Population Change
- Population by Race and Ethnic Group
- Population Age Structure, by Sex
- Age Dependency Rates
- Births
- Deaths
- Birth Rate, per Woman Age
- Immigrants
- Out-Migrants
- Number of Unrelated Individuals
- One Parent Families, by Sex of Parent
- Percentage of Children with One Parent

7. HOUSEHOLDS

- Population in Non Household
- Number and Average Size of all Households
- Number and Percent with One Person over 64
- Number and Percent with One Person over 74
- Others?

8. HOUSING

- Adequate Space
- Cost per square foot

9. ACCESSIBILITY

- Average Distance to Nearest Interchange
- Average Distance to Nearest Airline Service
- Average Distance to Nearest Medical Facility
- Average Distance to Nearest School

10. PUBLIC SAFETY

- Probability of Being Victimized

11. LEADERSHIP

- Rank Personal Situation
- Personal Confidence (self esteem)
- Alienation

12. SOCIAL COSTS

The sum of public cost for each of the major categories—total federal, state, and local government expenditures on all public services.

- Social cost = sum of cost for:
  - ▲ health
  - ▲ education
  - ▲ housing
  - ▲ public safety
  - ▲ poverty
  - ▲ transportation
  - ▲ all other

ables. Otherwise, we are likely to create more of a monster than we can tame in the near term. My impression is that a selection of one or two indicators from a broader set will be most useful. If certain series are not available or do not work in the model, etc., then a layman such as myself has a broader set from which to chose for the next iteration of model development and testing.

Indicator Model—General Specification Based on Time Series Data

The indicator model is a first step at measuring downstream consequences. Several components must be carried in the system if it is to be useful in this policy environment. Since we do not have a total theoretical framework to guide this process, some parts are necessarily judgmental. After trying to piece the system together, we may find that several related pieces of theory can be applied. For example, many of the economic variables can be derived directly from a Wharton-type model, developed to reflect the economic structure of the general economy.

For other components of the model, I am going to use a term suggested by Professor Willard Cochrane—*factors affecting*. He tells me that when modeling work for the agricultural sector began in the 20s and 30s all theoretical components were not known. But if the issue from Congress was a cotton price forecast, a model was developed to explain "factors affecting" cotton prices. Naturally, things like cotton production, income, and processing cost entered this equation.

I have reviewed this process of model specification, estimation and application in the policy arena several times. From my perspective, the demand side began to take shape in the 30s with a first simultaneous model suggested for the watermelon industry, of all things, in the 1940s. But it was not until the late 50s and early 60s that an attempt was made at a theoretical treatment and specification of the supply side. Even then, several attempts were made without major success until Houck and Subotnik unraveled the theory of combining market and government variables in a single supply response equation in the mid to late 1960s, with first publications on the soybean industry in 1971.

Perhaps we are further along on some pieces, but my experience with model development tells me this will be a slow process. So, this is an attempt to try to convey a complete system that reflects very crude first steps toward an internally compatible model.

The process suggested follows Fox, King, Foote and several others who began to fashion the first aggregate, four-equation model for agriculture in the early 50s. It was evident in looking at these specifications that they had already contemplated larger frameworks; however, some simpler models were specified on the first round.

Although only one to two variables are selected per category in the following treatment, downstream models can be inserted with considerably more detail. In fact, we are likely to get questions about a particular category that expands some components faster than others. As with the earlier work by the pioneers in the agriculture modeling side, many sectors were aggregated to get a first notion of total movement or momentum. This strategy is primarily the motivation for the following set of specifications.

In considering "factors affecting," some variables necessarily must be in the system. These include measures of the 1) general economy, 2) public expenditures and, perhaps, 3) education. The general economy proxy is a necessary component because of its cyclical nature—good and bad times. Education also appears to be a general balance factor; however, as Daryl Hobbs and others suggest, the poverty component may be overpowering.

With these broad concepts in mind, a first crack at internal compatibility may proceed as follows:

General Specification of a Socio-Econometric Model of Rural Communities

General Economy

1. *Economics* = f (Wharton Econometrics)

Public

2. *Public Revenue* = f [Economics, Education, Health, Tax Policy, Tax Capacity]

   = f [GNP, Drop-out Rate, Infant Mortality, Tax Rate, Poverty Index]

Poverty

3. *Poverty Index* = f [Economics, Education, Public Support, Health, Accessibility, Sociological Indicator]

   = f [GNP, Drop-out Rate, Infant Mortality, Distance, Average Age Marriage]

Health

4. *Infant Mortality* = f [Economics, Education, Public Support, Accessibility, Poverty Index, Sociological Indicators]

   = f [GNP, Drop-out, Public Revenues, Distance, Poverty Index, Average Marriage Age]

% Health Insurance = f [GNP, Drop-out, Public Revenues, Distance, Poverty Index, Average Marriage Age]

Education

5. *Drop Out Rate* = f [Economic, Public Support, Health, Accessibility, Poverty Index, Sociological Indicators]

= f [GNP, Public Revenues, Infant Mortality, Distance, Poverty Index, Average Marriage Age]

Demographics

6. *Population Growth* = f [Economic, Education, Public Support, Health, Sociological Indicators]

= f [GNP, Drop-out Rate, Public Services, Infant Death Rate Average Marriage Age]

Household

7. *% One Parent Families* = f [Economic, Education, Public Support, Health, Poverty Index, Sociological Indicators]

= f [GNP, Drop-out Rate, Public Revenues, Infant Death Rate, Poverty Index, Average Marriage Age]

Housing

8. *Cost* = f [Wharton Forecast]

9. *Accessibility* = f [Economic, Public Support, Tax Capacity, Education, Demographics]
Average Distance
from Metro?
from interstate?

= f [GNP, Public Revenue, Poverty Index, Drop-out Rate, Population Growth]

10. *Public Safety*
% of Victimization = f [Economic, Education, Public Revenue, Poverty Index, Sociological Indicators]

= f [GNP, Drop-out Rate, Public Support, Poverty Index, Single Parent Families]

11. *Leadership*
Composite of the movement of the above set of indicators.

Public Costs—Federal, State and Local Public Services

1. *Health* = f [Poverty Index, Sociological Indicators, Economic, % Public Revenues, Education]

   = f [Poverty Index, Single Parent Families, GNP, % Public Expenditures, School Drop-Outs]

2. *Education* = f [Economic, % Public Revenues, Poverty Index, Health, Sociological Indicators]

   = f [GNP, Public Expenditures, Infant Mortality, Single Parent Families]

3. *Transportation* = f [Economic, % Public Revenues, Education, Poverty Index, Population Indicators]

4. *Welfare* = f [Economic, % Public Revenues, Education, Poverty Index, Sociological Indicators]

5. *Housing* = f [Economic, % Public Revenues, Education, Poverty Index, Demographics]

6. *Crime* = f [Economic, % Public Revenues, Education, Poverty Index, Demographics, Sociological Indicators]

May want two to three breakdowns here so that penal institution costs can be directly estimated.

Crime* = Crime cost less penal institutions

Penal Institutions = f [. . . . . .]

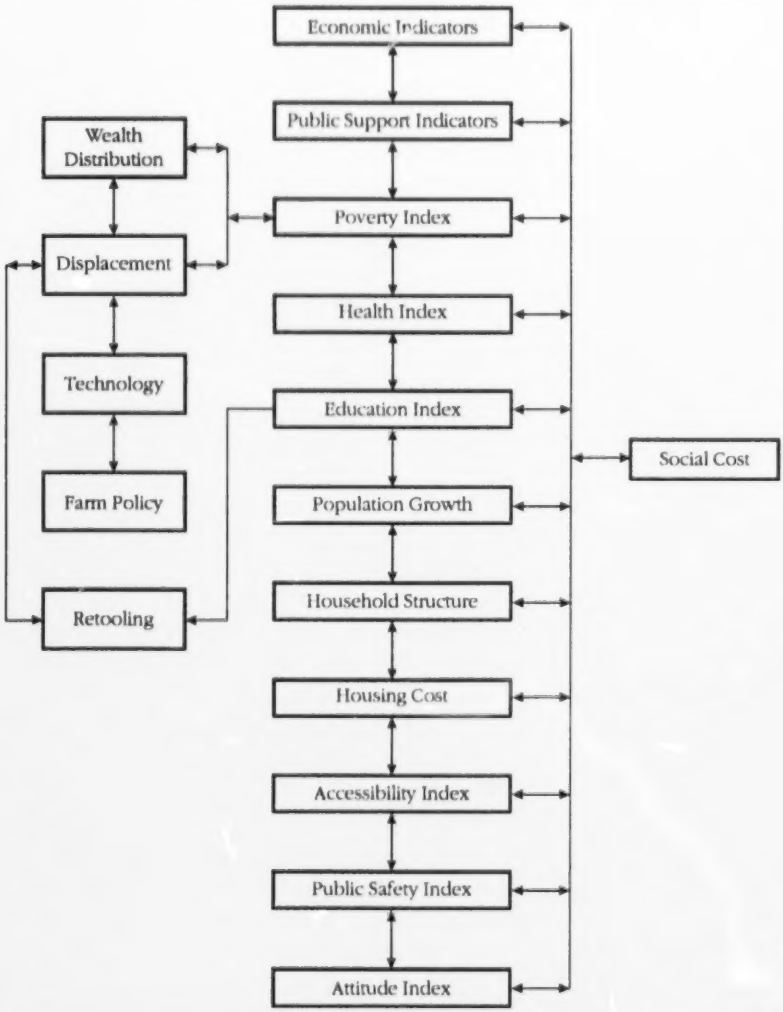
7. *All Other Social Costs* = f [Economic, % Public Revenues, Education, Poverty Index, Demographics, Sociological Indicators]

8. *Total Social Costs* = Health + Education + Transportation + Welfare + Housing + Crime + All Others

The above specifications allow for many different combinations of variables, some combinations must be maintained, otherwise downstream consequences cannot be ascertained. If the poverty index is a critical component, then its trace throughout the system of equations must be maintained.

A flow chart depicting this modeling process is reflected in Figure 5. This framework also allows for refinement and modifications. In-depth work that incorporates a larger number of indicators, and hence a broader model, can be inserted. Therefore, a short-term goal is to develop a macro model that can be modified by inserting into this system more refined research as it becomes available.

Figure 5. Model Flow Chart



Interactive Process that Produces Longer Term Projections—Models and Expert Panels

One of the most significant lessons learned in the policy modeling process undertaken by FAPRI has been the necessity of interfacing model projections with expert judgment. There are two reasons for this conclusion. *First*, models take a long time to pass through the stages of testing before meeting the standards of an operational system. Even after development and testing, data limitations plus estimation problems often leave extremely wide ranges of uncertainty around projections. Simply stated, there are many reasons why one could expect model performance to be limited. *Second*, there are many experts with substantial insight into a particular subject area. In our profession, the best example is extension colleagues. They are familiar with many aspects of a particular issue. They also have considerable hands-on experience plus knowledge of a broad set of information that includes data systems, research, policymakers, and other significant individuals. Such individuals have been invaluable to FAPRI modelers, from the standpoint of model development, structural estimation and corresponding projections. A mixture seems to keep things on an even keel.

FAPRI uses a procedure whereby internal projections (the baseline) are made using the current set of models. It takes approximately three weeks to prepare for what is affectionately referred to as the "melt down" week. This is a week during which Iowa State, Texas A&M and Missouri hammer out the actual ten-year projections (baseline). Although this is a model- based process, a great deal of interaction occurs with outside experts. Their judgment is canvassed by phone as the process unfolds. We may, for example, talk to people at Wharton about the economy, staffers with Congressional committees about policy interpretation, USDA officials regarding domestic and foreign policies, plus many extension experts and other academics.

A more formal attempt at interaction with experts takes place in January of each year when from fifty to eighty people are invited to review the baseline. As previously indicated, this involves a one and one-half day conference during which each commodity is presented with at least two outside expert responses. The audience is always invited to make comments. It turns out that this is one of the only occasions during which farm policymakers have a chance to interact informally. So the baseline review is a focal point; however, a significant reason for attending the conference is to pick up information from the Congressional Budget Office, the Office of Management and the Budget, the USDA, congressional staffers, commodity and farm organizations, etc.

After this review process, FAPRI modelers return for a second run of the baseline. Oversights, mistakes, etc., are reworked for a final product. This baseline is widely distributed with approximately

1,700 copies mailed out around the country. We are often asked to present the baseline to several audiences in Washington, D.C., and around the country. Generally this process stimulates questions requiring the evaluation of new options. These options are evaluated by comparing expected consequences with the current baseline. This latter process is again often conducted with direct input from many individuals.

We have been heavily criticized by some of our colleagues for using this interfaced process. Their claim is that a pure model solution should be presented to the public. My reaction, and that of others in FAPRI, is that pure solution and research belongs in journal articles. This is the place where the latest research should reside. It is easy to keep a record of research achievements via publications; but policymakers and others deserve the best shot that we can give them. For this reason, components of the model that do not measure up are turned off and outside judgment prevails. We are very straightforward about which components have been turned off and where judgment prevails. Also, this process takes the pressure off the modeler in that research time can be directed toward problem areas. It is expected that the modeler's batting average will improve over time.

Now the case for RUPRI: we don't have models readily available, so how do we set up an interactive process? As a point of departure, I think the following process may work in generating a baseline.

1. For each subject area invite from three to five seasoned veterans to participate in a downstream exercise during which the objective is to make a five- and ten-year outlook statement. We need to carefully sort through individuals that have worked in an active policy environment such as committees associated with state and national growth and development. These individuals can be interfaced with academics and other specialists in this delphi process.

2. Provide this group with a set of trend estimates based on historical data for each of the selected policy indicators. The trend line should project out five to ten years.

3. Have each group individually evaluate the likelihood of this trend prevailing in the future by using any information at their disposal. It will be important that a consensus is reached and reasons given for departure from trend.

4. Set up a conference that concentrates on blending these projections. The first day would involve a response from each group with some justification of their projection with two outside reviewers. Each panel session would leave time for audience participation.

5. The second day of the conference would involve a re-estimation

process with each panel working on a revised baseline. Panels would be in working groups such that easy access could occur if information was required from other panels.

6. The third day would be devoted to two activities. The first half of the day would repeat the process of the first day. The afternoon would proceed a bit differently. All panels would proceed on a year-to-year basis in developing a compatible forecast. A set of blackboards would be utilized to organize the process. All assumptions, plus first year (1992) projections, would be debated relative to possible interaction or subsequent effect. The debate would proceed along the lines of the sequence presented previously. All participants would have trend estimates with corresponding graphs and could easily follow the process. The objective would be to reach a consensus based on reasonable judgement. In some cases, personality clashes do occur. It would be the responsibility of the moderator to keep the debate open and to minimize discussion that tends to raise blood pressure. No one would be forced to use any number, the objective would be to try to reach a consensus across all categories. In cases in which consensus cannot be reached, one member from each panel would be asked to hammer out a final number.

   My experience with this process is that it is highly educational. Many veterans with different perspectives provide insights that would take many man hours to track down. I have always found this process leads to a high plane of debate and conclusions.

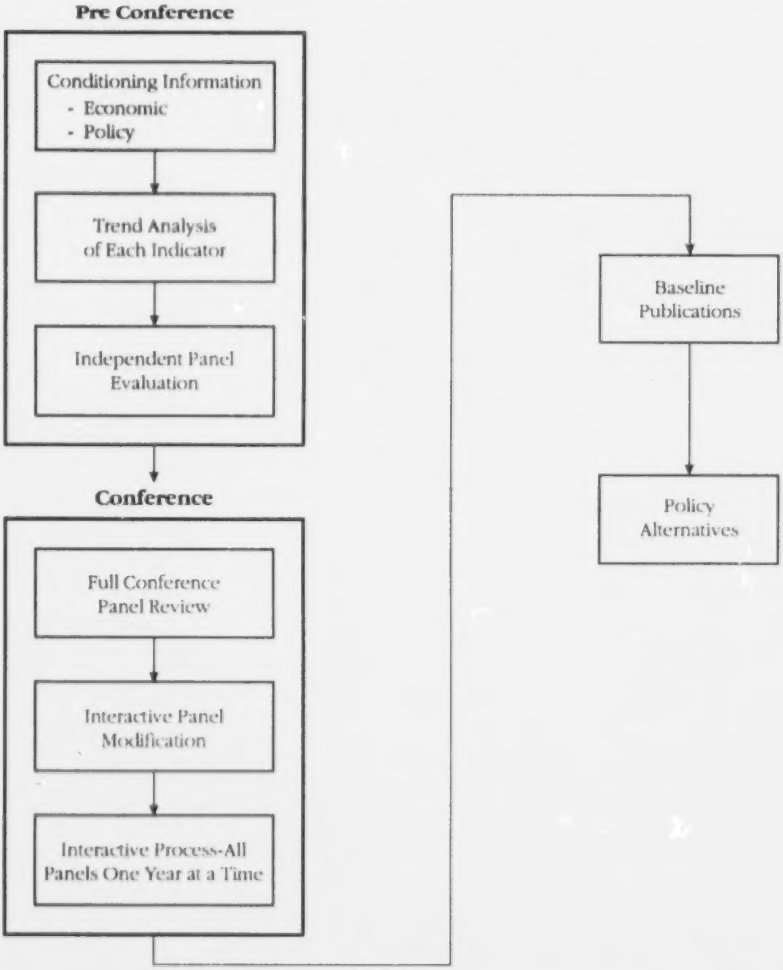
7. Final estimates are formalized and sent to each member after the conference has been completed. A baseline publication is developed that contains a brief discussion of the projections, expected consequences, and qualifications.

8. After publication and distribution, policy options are considered that may be evaluated by a subset of the above individuals. This essentially involves a new set of projections given some desired changes. It is likely that these events, whatever the focus, will require a new run through a macro economic model like Wharton. For example, a redistribution of government expenditures leading to relatively more monies in social programs and less spending on military will require interaction with a global economic system. We already have access to some of these runs. It may be desirable to begin to trace these impacts through this process to see if directions can be ascertained.

There is also a likelihood that model components can make a contribution. Simple correlations and previous research can certainly complement this process. For this reason, spreadsheet models can keep track of these subsets of equations for cross reference. It is also likely that specific budget information can be used in the process.

The following flow chart highlights this process (Figure 6):

Figure 6. RUPRI Baseline Process



Policy Environment and Priority Setting

We have been advised in FAPRI to be visible in Washington. Simply put, this amounts to a substantial amount of hall walking and listening. It is not unusual to find staffers that are completely turned off by the academic environment. They feel universities are non-re-

sponsible—leaving them with long periods before receiving answers, running through several departments to track down answers, and left with piecing information together with little feedback. All of the above factors are real and, in my mind, reconfirm the necessity of a central focus where information, data, and experts can be tracked down.

Simply stated, someone needs to be walking the halls in Washington on a continuous basis. This hall walking should focus on areas of interest, upcoming legislation, and key committees that will be studying these problem areas.

You can see from the direction of this paper that it is Washington focused. It is my expectation that we will get the most "bang for the buck" if we can establish a basebook, baseline, and specific subject area papers that help focus and clarify issues ahead of us. For this reason, I am convinced that processes that begin to focus us on downstream consequences will be valuable in blending our research and attention to the total environment in front of us.

Washington is not the only policy game in town. RUPRI needs a clear link into the dynamics of state government. We need to identify about twenty individuals who have a very good historical perspective and knowledge of recent issues plus legislation that is on the books or is being considered for the next five to ten years. The same strategy of hall walking, phone calling, and canvassing needs to occur with this group.

Since a considerable portion of public funding comes from state and local governments, we need to be sure our subject area of priority research is discussed with these people so we establish a two-way interchange early on. My experience with this process is that state staffers become very interested and will generally spend time going over issues, data, and legislation. This interaction is absolutely necessary if our work is to remain relevant.

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